4.1 Employee Training

Stormwater training is required for all employees who work in areas where industrial activities or material handling activities are exposed to stormwater, or who are responsible for implementing activities necessary to meet the conditions of this permit. These employees include inspectors, maintenance personnel, and all members of your Pollution Prevention Team. The training session or sessions are expected to cover the contents of the facility SWPPP, control measures implemented to achieve compliance with applicable discharge requirements, spill containment and cleanup procedures, maintenance, monitoring, inspection, planning, reporting, and documentation requirements.

EPA recommends that training be conducted for any applicable employees at least annually and whenever a new employee starts who meets the description above. You should have a sign-in/sign-out sheet at each training class to document that employees have participated. Keep the sign-in/sign-out sheet with your SWPPP.

What to Include in Your SWPPP

Include the following:

- Person(s) responsible for conducting the training (a member of the Pollution Prevention Team, contractor, or other?)
- The employees or positions that will receive stormwater training.
- The frequency of stormwater training sessions (annually, upon hire, or other). EPA recommends at least once per year. For example, the SWPPP might state that stormwater training will be conducted annually in September so employees are ready for the upcoming wet weather season.
- The stormwater topics covered during the training session or sessions.
- The sign-in/sign-out sheets from the training session.

SWPPP Tip!

Customize the employee training to the issues at your facility, and ensure that employees are trained on the control measures they are expected to implement. Among the topics you cover in your training should be some of the basic principles of stormwater management. For example, you should convey that:

- Stormwater pollution occurs when rainfall runoff picks up pollutants from the ground or areas exposed to rainfall.
- Polluted stormwater can cause significant water quality problems, such as fish kills and drinking water contamination. Stormwater runoff is typically discharged directly to receiving waters, and is not treated somewhere else, like at a wastewater treatment plant.
- Potential stormwater pollutants should be kept inside or under cover whenever possible.
- The best way to prevent stormwater problems is through general good housekeeping practices. A clean and organized facility will usually have very few stormwater problems.
- If anyone sees any potential stormwater problems, they should report it to the facility operator or a member of the stormwater pollution prevention team.

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Figure 12. In addition to employee training, labeling storm drains is a good measure to educate employees.

4.J Non-Stormwater Discharges

In Section 3.A, this guide discussed the assessment of allowable and prohibited non-stormwater discharges at your site. As stated in that section, unauthorized non-stormwater discharges cannot be discharged from your facility unless specifically authorized by a separate, individual NPDES permit. Your SWPPP should describe the assessment you conducted under Section 3.A, how you eliminated any unauthorized non-stormwater discharges, and your plans to prevent unauthorized non-stormwater discharges at your facility.

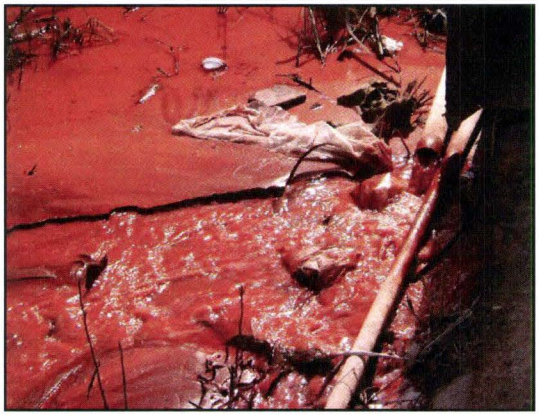

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Figure 13. Unauthorized non-stormwater discharge from an industrial facility.

What to Include in Your SWPPP

Include the following:

- A list of allowable non-stormwater discharges that occur at your facility.
- A description of unauthorized non-stormwater discharges found at your site and how they were eliminated.
- Steps taken to ensure that other unauthorized non-stormwater discharges do not occur in the future.

Note: If this section is already addressed by your documentation of non-stormwater discharges (see Section 3.A), you can simply include a cross-reference to that section of your SWPPP.

4.K Waste, Garbage, and Floatable Debris

You are responsible for making sure that stormwater runoff does not carry waste, garbage, and floatable debris to receiving waters. To verify compliance with this requirement, you should identify and implement control measures (e.g., good housekeeping, sweeping, keeping lids closed on dumpsters) to keep exposed areas free of such materials. Alternatively, your SWPPP should identify how you will intercept and properly dispose of these materials before they leave your facility.

What to Include in Your SWPPP

Include the following:

- A description of controls and procedures that will be used to minimize discharges of waste, garbage, and floatable debris.
- Descriptions of the location of these control measures and procedures at your site.

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Figure 14. Poor management of waste and garbage at a facility.

4.L Dust Generation and Vehicle Tracking of Industrial Materials

As an operator, you are responsible for minimizing generation of dust and off-site tracking of raw, final or waste materials. Dust control practices can reduce the activities and air movement that cause dust to be generated from disturbed soil surfaces. Airborne particles pose a dual threat to the environment and human health. Dust can be carried offsite, thereby increasing soil loss from disturbed areas and increasing the likelihood of sedimentation and water pollution. Control measures to minimize the generation of dust include:

- *Sprinkling/Irrigation*. Moistening the ground surface with water is an effective dust control method for haul roads and other traffic routes.
- *Vegetative Cover*. By establishing a vegetative cover on areas that will not see vehicle traffic, exposed soil is stabilized and wind velocity at ground level can be reduced, thus reducing the potential for dust to become airborne.
- *Mulch*. Mulch is a quick and effective, but not permanent, means of dust control for newly disturbed areas.
- *Wind Breaks*. Wind breaks can be trees or shrubs left in place during site clearing or constructed barriers such as a wind fence, snow fence, tarp curtain, hay bale, crate wall or sediment wall. The break reduces wind velocity, minimizing airborne transfer of soil off site.
- *Tillage*. Deep tillage in large open areas brings soil clods to the surface where they rest on top of dust, preventing it from becoming airborne.
- *Stone*. Stone can be an effective dust deterrent for construction roads and entrances or as a mulch in areas where vegetation cannot be established.
- *Spray-on Chemical Soil Treatments (Palliatives)*. Examples of chemical adhesives include anionic asphalt emulsion, latex emulsion, resin-water emulsions and calcium chloride. Chemical palliatives should be used only on mineral soils. When considering chemical application to suppress dust, determine whether the chemical is biodegradable or water-soluble and what effect its application could have on the surrounding environment, including waterbodies and wildlife.

To reduce vehicle tracking of materials and sediment, the operator should keep stored or spilled materials away from all roads within the site. Specific measures such as setting up a wash site or separate pad to clean vehicles prior to their leaving the site may be effective as well.

What to Include in Your SWPPP

Include the following:

- A description of controls and procedures used at your site to minimize the generation of dust.
- Descriptions of procedures and controls used to minimize off-site tracking of raw, final, or waste materials.
- Describe the location where each control and/or procedure will be implemented and include on the SWPPP site map.

4.M Numeric Effluent Limitations Based on Effluent Limit Guidelines

Some industrial activities identified in industrial stormwater permits also have Federal numeric effluent limits (called effluent limitation guidelines) that must be achieved in stormwater discharges. The effluent limits are maximum concentrations or levels of specific pollutants that can be discharged in facility stormwater. If your facility includes one of the industrial categories listed below, refer to your industrial stormwater general permit (Parts 6.2.2.1 and 2.1.3 of EPA's 2008 MSGP) regarding numeric effluent limits and monitoring requirements to which you are subject:

- Discharges resulting from spray down or intentional wetting of logs at wet deck storage areas
- Runoff from phosphate fertilizer manufacturing facilities that comes into contact with any raw materials, finished product, by-products or waste products
- Runoff from asphalt emulsion facilities
- Runoff from material storage piles at cement manufacturing facilities
- Mine dewatering discharges at crushed stone, construction sand and gravel, or industrial sand mining facilities
- Runoff from hazardous waste landfills

- Runoff from non-hazardous waste landfills
- Runoff from coal storage piles at steam electric generating facilities

An example of a numeric effluent limit is the requirement for facilities that discharge stormwater from asphalt emulsion facilities to meet specific, numeric concentration limits for TSS, pH, and oil and grease (i.e., based on the limits in 40 CFR Part 443, Subpart A).

If your facility is subject to numeric effluent limits, you must document the location and type of control measures installed at your site to meet those limits.

What to Include in Your SWPPP

Include the following:

- All numeric effluent limits the facility is required to meet based on effluent limit guidelines.
- A description of the control measures used to meet the numeric effluent limits.
- The location of each control measure at your site.

4.N Additional Controls to Address Impaired Waters

Many general permits have additional requirements for discharges to impaired waters. "Impaired waters" have been identified by a Tribe, State, or EPA as not meeting applicable State water quality standards pursuant to Section 303(d) of the Clean Water Act. This may include both waters with approved or established Total Maximum Daily Loads (TMDLs), and those for which a TMDL has not yet been approved or established.

SWPPP Tip!

Impaired waters are streams, rivers, and lakes that do not currently meet designated uses and water quality standards. States, territories, and authorized tribes are required under the Clean Water Act to compile lists of known impaired waters, called 303(d) lists. Stormwater discharges to impaired waters may trigger additional control measures and monitoring requirements. For facilities subject to EPA's 2008 MSGP, see Part 2.2 for a more detailed discussion of water quality-based effluent limitations and conditions for discharging to impaired waters.

A TMDL determines the greatest amount of a given pollutant, such as sediment, that a water body can receive without violating water quality standards and designated uses. The TMDL then establishes pollution reduction goals to bring the water body into compliance with water quality standards. Facilities that are subject to NPDES permits (i.e., "point sources"), such as facilities subject to EPA's 2008 MSGP, which discharge the pollutant causing the water body impairment, receive "waste load allocations" or "WLAs". The WLA estimates the daily amount of the impairment pollutant that can be discharged from particular sources or categories of sources so that the waterbody can be restored to meeting its applicable water quality standards.

Should your facility discharge stormwater to a water body subject to a TMDL, EPA or a State permit authority may require additional effluent limits, monitoring requirements, or other restrictions consistent with an applicable WLA, or you may be required to apply for an individual NPDES permit. Where you have been informed either in the permit or directly by EPA or a State permit authority that you are subject to any "water quality-based" discharge requirement consistent with an applicable WLA, you are required to document in your SWPPP the control measures used to meet that requirement and to describe the location of such control measures.

SWPPP Tip!

Find impaired waters near your facility **– Use EPA's Water Locator Tool (available at www.epa.gov/npdes/stormwater/msgp) or other tool to map impaired waters within 10 miles of your facility. Enter your facility address in Step 1, then click on "Retrieve List of Impaired Waterbodies" under step 3 to see the list.**

What to Include in Your SWPPP

Include the following:

- A description of the control measures used to meet the water quality-based effluent limits.
- The location of each control measure at your site.

Section 5: **Procedures for Inspections and Monitoring (Step 4)**

The next step in developing your SWPPP is to set out the procedures you will follow for inspecting your site and monitoring your stormwater discharge. The procedures you develop in your SWPPP for inspection and monitoring will help you understand whether your control measures are working and, if not, provide you with ways you may improve your stormwater control.

Industrial stormwater permits typically require three types of inspections:

1. Routine facility inspections (see Section 5.A)
2. Visual assessments (see Section 5.B)
3. Annual comprehensive site inspections (see Section 5.C)

Some States also require you to take samples of your stormwater discharge for laboratory analysis. Check the applicable section of your industrial stormwater permit to determine if you are required to collect water quality monitoring samples. See Section 5.D for guidance on how to address your monitoring procedures in the SWPPP.

The following sections describe the type of information you should document in your SWPPP and the associated decisions you will have to make when planning for and conducting each of the three types of inspections.

EPA's 2008 MSGP requires three types of facility inspections.

1. **Routine facility inspections (2008 MSGP, Part 4.1)**
2. **Quarterly visual assessment of stormwater discharges (2008 MSGP, Part 4.2)**
3. **Comprehensive site inspections (2008 MSGP, Part 4.3)**

The 2008 MSGP also includes the requirements for the following types of monitoring:

1. **Benchmark monitoring (2008 MSGP, Part 6.2.1)**
2. **Effluent guidelines limitation monitoring (2008 MSGP, Part 6.2.2)**
3. **State or Tribal monitoring (2008 MSGP, Part 6.2.3)**
4. **Impaired waters monitoring (2008 MSGP, Part 6.2.4)**

Monitoring procedures are described in Part 6.1 of the 2008 MSGP.

5.A Routine Facility Inspections

Your industrial stormwater permit will likely specify a *minimum* frequency for conducting routine facility inspections. The minimum frequency typically ranges from once per month to once per quarter; however, EPA recommends that you develop a routine inspection schedule customized for your facility and specific site conditions, which in many instances will require that you inspect more frequently than the minimum requirement. EPA also suggests conducting routine inspections when measurable precipitation falls during normal business hours. Observing site conditions during storms provides you with real-time feedback on control measures that are working and those that are not working effectively.

EPA's 2008 MSGP requires quarterly routine facility inspections of all areas where industrial materials or activities are exposed to stormwater, and of all stormwater control measures used to comply with the effluent limits contained in the permit. Inspections must be conducted by qualified personnel, including at least one member of your pollution prevention team, during regular business hours. You must specify the relevant inspection schedules in your SWPPP document as required in Part 5.1.5.

The 2008 MSGP requires that at least one of the four quarterly inspections each year be conducted when a stormwater discharge is occurring.

SWPPP Tip!

You should check your industrial stormwater general permit to determine if it establishes exceptions to the inspection requirements for certain types of sites. For example, 2008 MSGP Part 4.1.3 identifies exceptions to routine visual inspections for inactive or unstaffed sites.

Recommended Routine Facility Inspection Sequence

Although you are given the discretion to determine how best to conduct your inspection, EPA recommends that your inspection follow a sequence that corresponds to how raw materials arrive at your site and are stored or processed in areas exposed to stormwater, and to how intermediate or finished products are stored, processed, or transported from your facility. Accordingly, the following recommended inspection sequence will help ensure that you conduct a thorough routine inspection at your facility. Whichever process you determine is appropriate for your facility, you are required to describe that approach in your SWPPP.

SWPPP Tip!

Invest in an inexpensive digital camera to photo-document your inspections. Maintaining a photo history of inspections and control measures can help you to recognize if conditions changed or your control measures are degrading. Photographs can also help provide documentation to EPA or state inspectors that control measures are being maintained and replaced as needed.

1. Plan your inspection: Develop a consistent process to ensure that you inspect all areas. One method to ensure that your inspections are consistent and thorough is to create a checklist (or make notes on a copy of your SWPPP) of areas to inspect. Use as a resource your updated site map identifying the locations of industrial activities exposed to stormwater, stormwater conveyances and discharge points, and any BMPs.
2. Evaluate the area where raw materials are delivered. Are these areas contained or is there potential for stormwater to carry spills or pollutants away from the drop area? If so, can these pollutants leave your site to an adjoining facility, storm drain, or surface water? If so, additional control measures should be implemented.
3. Are raw materials stored in a contained area with overhead cover, berms, or other secondary containment? If not, do the raw materials have the potential to contribute to stormwater pollution?

   Note: Single-wall chemical containers need to be located within secondary containment structures, behind berms, or covered to prevent stormwater contamination from an accidental release of containerized chemicals. Similarly, solid materials with the potential to contain pollutants (i.e., scrap material or wrecked vehicles) should include secondary containment.
4. Is equipment maintenance and fueling conducted in appropriately contained areas? Are spill kits present and full in areas where a liquid spill could be expected?
5. Do the industrial processes occur in covered and contained areas?
6. Where do you store waste material?

   Note: If the waste material has the potential to contaminate stormwater it must be stored in a contained area or otherwise controlled. Be sure to evaluate the facility "bone-yard" and scrap all equipment that is out-of-date and not intended to be reused.

7. Is the finished product appropriately contained for potential pollutant sources?
8. Following the internal evaluation, walk the perimeter of your site and look for evidence of stormwater discharges—particularly stains from oil and grease or chemicals. Should you observe these, look at the discharge area and consider additional control measures. You should specifically observe all stormwater outfalls where stormwater leaves your facility.
9. Following each inspection, you will need to make note of control measures that require maintenance, or that need to be replaced, and make sure that the SWPPP and site map are current regarding industrial activities and potential pollutants.
10. Finally, where appropriate, repair or replace worn or ineffective control measures as soon as possible but certainly before the next forecasted precipitation event.

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Figure 15. Example of a sheen indicating the presence of oil or other hydro carbons.

SWPPP Tip!

As you conduct your routine facility inspections, keep in mind these visual indicators of poor control measures or missing control measures:

1. Rainbow colored sheen on the surface of stormwater indicates the presence of oil or other hydrocarbons;
2. Brown or other dark colored streaks in flowing stormwater indicates soil erosion or uncontained sediment;
3. Stormwater flowing through straw waddles or other stormwater containment barriers;
4. Foam;
5. Trash and other debris being carried off-site by stormwater; and
6. Overflowing storm drains or detention ponds could be indicative of a clog or poor inlet design.

Routine Facility Inspection Reports

Your routine facility inspections will need to be recorded and documented. Generally, a standard inspection report is taken into the field and completed for each inspection. You should include in your SWPPP a copy of the standard inspection form you will use. An example routine facility inspection form can be found in the "Additional MSGP Documentation Template" on EPA's website at **www.epa.gov/npdes/pubs/msgp2008_recordkeepingtemplate.doc**.

SWPPP Tip!

Remember to update your SWPPP if you add, remove, or modify control measures following a routine visual, or other, inspection. Should you get inspected, EPA or the State agency will expect that all control measures identified in your SWPPP to be current and to be effectively implemented at your facility.

What to Include in Your SWPPP

Your SWPPP should describe the routine facility inspection process in enough detail that a member of your staff could complete an inspection by following the description in the SWPPP. The SWPPP description should include:

1. **Person(s) or positions of person(s) responsible for conducting the routine facility inspections**

   At least one member of your stormwater pollution prevention team should be involved in the routine facility inspections. Consider involving employees who regularly work in areas where stormwater may come into contact with industrial activity or materials.

2. **Schedules for conducting the routine facility inspections**

   Identify the minimum inspection frequency (e.g., monthly, quarterly) in your SWPPP. Consider scheduling the inspections for a set day every month or quarter, yet allow sufficient flexibility to be able to take advantage of a storm event, since many permits require that at least one inspection be conducted during a rain event.

3. **Routine facility inspection procedures**

   Describe how the routine facility inspection will be conducted, including which control measures or areas will be inspected and what the inspector will be looking for. Examples of things the inspector should be looking for include the condition of stormwater outfalls (trash accumulation, staining, evidence of unauthorized non-stormwater discharges, etc.); overall good housekeeping; and the condition of installed control measures (do any need to be maintained or replaced?).

   Among other procedures to describe, provide a description of the sequence you will follow during each inspection. One option is to use the recommended inspection sequence above or customize it to better suit your facility's layout.

4. **Reporting procedures**

   Describe your reporting procedures and include a blank copy of the inspection form that will be used during the routine inspections. Most industrial stormwater general permits require that inspection reports include the following:

   - The inspection date and time.
   - The name(s), title(s), and signature(s) of the inspector(s).
   - Weather information for the day of the inspection and, if appropriate, days or weeks prior to the inspection.
   - A description of any discharges observed.
   - A description of the visual quality of discharges (sheen, turbid, etc.).
   - Control measures in need of maintenance or repairs.
   - Control measures that need to be replaced.
   - Any incidents of noncompliance observed.
   - Additional control measures needed to comply with the permit requirements.

   Inspection reports also need to be signed by the inspector. Your inspection form should include a signature line for this.

5.B Visual Assessments

The second component of an effective stormwater inspection program is periodic visual assessments of the stormwater discharging from your facility. Visual assessments are conducted on samples taken during a storm event, and require that you make observations of the stormwater sample in order to qualitatively assess the nature of your discharge based on several visual parameters. This requires that you collect a stormwater sample in a clean, clear jar and look at the sample in a well lit area. Generally, a sample must be collected from each stormwater discharge location associated with industrial activity. The purpose of conducting visual assessments is to make sure that stormwater discharges are free from objectionable characteristics (i.e., pollutants you can see). Should you observe objectionable characteristics, you should backtrack upstream from the sample collection location to identify potential sources of the pollutants.

Some pollutants may be present in stormwater but cannot be seen; for this reason EPA or your State may require benchmark or effluent limit monitoring depending on the facility SIC code or industrial sector. See Section 5.D for more information on monitoring.

Most industrial stormwater permits do not require visual assessment samples to be collected consistent with 40 CFR Part 136 procedures (the Clean Water Act guidelines for

SWPPP Tip!

Check your industrial stormwater permit to determine if you are required to submit your visual assessment samples to a laboratory for analysis. The 2008 MSGP does not require samples to be submitted to a laboratory. However, if your permit does require you to submit samples for laboratory analysis, the samples must be collected and documented in accordance with 40 CFR Part 136 guidelines.

establishing test procedures for the analysis of pollutants); however, visual assessment samples should be collected in such a manner that the samples are representative of the stormwater discharge.

EPA's 2008 MSGP includes specific requirements for when and how to collect the visual assessment sample. You should look in your permit to determine what requirements apply to your facility's visual assessments. However, EPA believes its permit's requirements offer a clear and consistent way to conduct these assessments. They are summarized as follows:

- Collect stormwater samples within the first 30 minutes of an actual discharge from a storm event. If it is not possible to collect the sample within the first 30 minutes of discharge, collect the sample as soon as possible after the first 30 minutes. In this case, be sure to document in your records (kept with your SWPPP) why it was not possible to take samples within the first 30 minutes. In the case of snowmelt, samples must only be taken during a period with a measurable discharge from your site.
- Collect the sample in a clean, clear glass, or plastic container.
- Examine the sample in a well-lit area or, if necessary, illuminate with a strong flashlight.
- Collect the samples from discharges that happen at least 72 hours (3 days) from the previous discharge event.

What to Include in Your SWPPP

Include in your SWPPP a description of your visual assessment process:

1. **Person(s) or positions of person(s) responsible for visual assessments.**
   Note: The visual assessment should be conducted by a member of your stormwater pollution prevention team.
2. **Schedules for conducting the visual assessments.**
   Note: Identify the minimum inspection frequency (typically quarterly) in your SWPPP. You should also describe procedures for determining when to conduct the visual assessments (e.g., within 30 minutes of an actual discharge, at least 3 days from previous discharge, etc.).
3. **Specific items to be covered by the assessment** (e.g., the 2008 MSGP requires permittees to visually inspect the sample in a well-lit area to assess the following water quality characteristics:
   - Color
   - Odor
   - Clarity
   - Floating solids
   - Settled solids
   - Suspended solids
   - Foam
   - Oil sheen
   - Other obvious indicators of stormwater pollution)
4. **The number and locations of outfalls scheduled for visual assessments.** List the outfalls where visual assessments will take place, and make sure these locations are identified on your site map.
5. **A description of safety considerations, requirements, and equipment for collecting samples during wet weather events.**
   Note: Sample must be collected in a clean, clear glass (required for oil and grease samples) or plastic container. Describe any other equipment necessary to collect the samples (such as sampling poles for hard to reach outfalls, rain gear, etc.). Describe any necessary safety considerations for staff while collecting the samples (for example, if they are sampling at an outfall discharging into receiving water with high flows, or sampling in a manhole).
6. **Reporting procedures:** Describe your reporting procedures and include a blank copy of the assessment form that will be used during the visual assessments. Most industrial stormwater general permits require that visual assessment reports include the following:
   - Sample location(s)
   - Sample collection date and time, and visual assessment date and time for each sample
   - The names of individuals, and titles or job positions, collecting the sample and performing visual assessment, and their signatures
   - Nature of the discharge (i.e., runoff or snowmelt)
   - Results of observations of the stormwater discharge
   - Probable sources of any observed stormwater contamination
   - If applicable, why it was not possible to collect samples within the first 30 minutes of discharge.

The SWPPP should also contain a checklist or list of the water quality parameters that must be observed and documented.

Visual Assessment Documentation

Similar to the inspection reports for the routine facility inspections, you must document the results of your visual assessments in a written report. You should include a blank copy of your visual assessment report form that you will use in your SWPPP. An example of a visual assessment report can be found in the "Additional MSGP Documentation Template" on EPA's website at **www.epa.gov/npdes/pubs/msgp2008_recordkeepingtemplate.doc**.

Digital photos of the samples are recommended, but not required, to document the condition of the sample and future reference.

5.C Annual Comprehensive Site Inspections

Most industrial stormwater general permits require an annual comprehensive site inspection. The annual comprehensive site inspection is a more in-depth version of the routine facility inspection. The annual comprehensive site inspection evaluates the condition of control measures, taking into account trends observed in analytic and visual stormwater samples taken during the year, and found during routine inspections.

Check your general permit to determine if the comprehensive site inspection needs to be conducted at a certain time (e.g., by the end of the fiscal year). Some permits require you to submit your comprehensive site inspection findings to the State permit authority as part of your annual report, typically due shortly after the end of the fiscal year. EPA's 2008 MSGP requires that the annual report be submitted and postmarked within 45 days of completing the annual comprehensive site inspection.

The comprehensive site inspection must cover all areas of the facility affected by the requirements of your industrial stormwater general permit, including all potential stormwater pollutant sources identified in the SWPPP, areas where control measures are used to comply with applicable effluent limits, and areas where spills and leaks have been documented in the three years prior to the annual comprehensive site inspection. In addition, the annual inspection must, as appropriate, include a review of visual stormwater monitoring data collected each quarter of the previous year and the results of the routine site inspections.

SWPPP Tip!

EPA's 2008 MSGP requires you to conduct annual comprehensive site inspections once during each of the following inspection periods:

Year 1: September 29, 2008 – September 29, 2009

Year 2: September 29, 2009 – September 29, 2010

Year 3: September 29, 2010 – September 29, 2011

Year 4: September 29, 2011 – September 29, 2012

Year 5: September 29, 2012 – September 29, 2013

Comprehensive site inspections must be conducted by qualified personnel with at least one member of your stormwater pollution prevention team participating in the comprehensive site inspections.

The annual inspection should be preceded by evaluation of the year's visual stormwater sample observations, analytic monitoring data, and your routine site inspection findings. The overall review of the previous year's visual and analytic monitoring results will provide you with areas of focus for the annual inspection; however, the annual inspection must include all control measures included in the SWPPP, regardless of the results from the past visual assessments and site inspections. Inspecting all stormwater control measures is meant to ensure that they are functioning correctly, and, if not, to correct any deficiency or malfunction. Accordingly, at the end of the annual comprehensive inspection you, and your stormwater pollution prevention team, should be able to answer the following questions.

- Are the control measures in place, maintained, and operating effectively?
- Is the routine site inspection protocol effective and conducted at the appropriate frequency?
- If your previous visual samples been were indicated the presence of pollutants in your stormwater, and your analytic samples been found to have high levels of any benchmark pollutants or other pollutants of concern, do you suspect that any particular areas of your site are contributing to these monitoring results? Do you suspect that the improper functioning of any stormwater control measures is contributing to these monitoring results?
- Is the SWPPP up-to-date regarding all of the stated control measures and monitoring schedules?

Based on the answers to these questions, you may need to modify your stormwater management program and to update your SWPPP to address problems found during your inspection.

Comprehensive Site Inspection Documentation

The results, and documentation, of your annual site inspection must be maintained on-site and, depending on the requirements in your stormwater permit, submitted with your annual report. An example of a comprehensive site inspection report can be found in the "Additional MSGP Documentation Template" on EPA's website at **www.epa.gov/npdes/pubs/msgp2008_recordkeepingtemplate.doc**.

What to Include in Your SWPPP

Include in your SWPPP a description of the annual comprehensive site inspection process:

1. **Person(s) or positions of person(s) responsible for inspection**
   Note: Include at least one member of the stormwater pollution prevention team.
2. **Schedules for conducting the inspections**
   Note: Describe when during the year the annual inspection will take place.
3. **Describe the list of documents to be reviewed prior to the annual site inspection.** This list will typically include:
   - The current SWPPP
   - All routine inspection reports for the past year
   - All visual assessment reports for the past year
   - Other documentation that may relate to how your facility complies with stormwater permit requirements, such as maintenance records, spill records, etc. for the past year.
4. **A copy of the current SWPPP site map**
   Note: A current copy of the site map can be used during the comprehensive site inspection to make sure the inspector is covering all required areas.
5. **Procedures for how the annual inspection will be conducted.** Describe how the annual inspection will be conducted, including which control measures or areas will be inspected and what the inspector will be looking for. Specific items to be covered by the inspection include:
   - Industrial materials, residue, or trash that may have or could come into contact with stormwater;
   - Leaks or spills from industrial equipment, drums, tanks, and other containers;
   - Offsite tracking of industrial or waste materials, or sediment where vehicles enter or exit the site;
   - Tracking or blowing of raw, final, or waste materials from areas of no exposure to exposed areas; and
   - Control measures needing replacement, maintenance, or repair.
6. **A copy of the annual site inspection form you will use.**
   Note: EPA's 2008 MSGP has a comprehensive site inspection form in Appendix I of EPA's 2008 MSGP. Your annual site inspection form should contain:
   - The date of the inspection;
   - The name(s) and title(s) of the personnel making the inspection;
   - Findings from the areas of your facility that were examined;
   - All observations relating to the implementation of your control measures including:
     - Previously unidentified discharges from the site,
     - Previously unidentified pollutants in existing discharges,
     - Evidence of, or the potential for, pollutants entering the drainage system;
     - Evidence of pollutants discharging to receiving waters at all facility outfall(s), and the condition of and around the outfall, including flow dissipation measures to prevent scouring, and
     - Additional control measures needed to address any conditions requiring corrective action identified during the inspection.
   - Any required revisions to the SWPPP resulting from the inspection;
   - Any incidents of noncompliance observed or a certification stating the facility is in compliance with this permit (if there is no noncompliance); and
   - A statement, signed and certified in accordance with Appendix B, Subsection 11 of EPA's 2008 MSGP.
7. **A schedule for completing and submitting (if required) the annual site inspection form/report in a timely manner.**

5.D Documentation of Monitoring Procedures

Your industrial stormwater general permit may include requirements to conduct stormwater discharge monitoring. The type of monitoring you are required to conduct will likely be based on your type of industrial activity. Not all types of industrial activity will be required to collect stormwater discharge samples, however, if your facility is required to conduct monitoring (such as benchmark monitoring or effluent limitation guideline monitoring), you must describe the procedures you will use to carry out this monitoring in your SWPPP.

EPA has prepared an *Industrial Stormwater Monitoring and Sampling Guide* (available at **www.epa.gov/npdes/stormwater/msgp**) that will support this guide. The *Industrial Stormwater Monitoring and Sampling Guide* provides a more detailed description of monitoring approaches and procedures that are recommended than is included in this guide.

As a general matter, your stormwater discharge samples will be taken at your facility's stormwater outfall locations, not at locations within your facility. Some stormwater general permits allow you to sample at only one outfall when multiple outfalls at your facility have similar industrial activities, control measures, exposed materials, and runoff coefficients. Outfalls that have these similar characteristics are called "substantially identical outfalls" or "representative outfalls." See your industrial stormwater general permit for more information.

What to Include in Your SWPPP

Include in your SWPPP, a description of the following monitoring requirements:

1. **What you need to monitor**

   Make sure your SWPPP clearly identifies the parameters you need to monitor, and any applicable benchmark concentrations or effluent limits associated with each parameter.

2. **Where you need to monitor**

   Your site map should identify the outfalls at your facility. In your SWPPP, identify at which outfalls you will be required to monitor. If you are allowed to sample one of the outfalls that are "substantially identical", and you plan on using a representative outfall, include the following documentation in your SWPPP:

   - Location of each substantially identical outfall;
   - Description of the general industrial activities conducted in the drainage area of each substantially identical outfall;
   - Description of the control measures implemented in the drainage area of each substantially identical outfall;
   - Description of the exposed materials located in the drainage area of each substantially identical outfall that are likely to be significant contributors of pollutants to stormwater discharges;
   - An estimate of the runoff coefficient of the drainage areas (low = under 40%; medium = 40 to 65%; high = above 65%); and
   - Why the outfalls are expected to discharge substantially identical effluents.

3. **When you need to monitor**

   If you are required to monitor, your industrial stormwater general permit will specify a monitoring frequency (typically quarterly or annually). For each of the parameters you identified above, include in your SWPPP the monitoring frequency. Some permits also specify exemptions or alternative monitoring periods, which should also be addressed in your SWPPP.

   Your SWPPP should also describe the type of storm event that should be monitored. In the 2008 MSGP, EPA requires monitoring during a storm event those results in an actual discharge from your site ("measurable storm event") that follows the preceding measurable storm event by at least 72 hours (3 days).

4. **How you will conduct the monitoring**

   Describe in your SWPPP how you will conduct the monitoring, including who will collect the samples. Typically, monitoring is conducted by taking one grab sample from a discharge resulting from a measurable storm event and collected within the first 30 minutes of a measurable storm event, during normal business hours, when stormwater is discharging from your facility.

   Also describe any sample documentation and preservation procedures you plan to use. Some samples may need to be analyzed within a short time, or may need to be preserved with blue ice before being analyzed.

5. **Where you will send the sample for analysis**

   Finally, in your SWPPP, include information about the laboratory where you will send the samples for analysis. Include information such as lab name and address, any sampling procedures required by the lab, and who will take the samples to the lab.

Section 6: **Completing Your SWPPP**

Now that you have conducted a site assessment of your facility, developed maps, selected control measures, and developed procedures for inspections and monitoring. You are almost done with your SWPPP! The last step is to make sure all this information is organized into a single document (your SWPPP) and to obtain NPDES permit coverage.

6.A Finish your SWPPP

The information you put together as part of Sections 3 through 5 make up the contents of your SWPPP. There are only two more steps for you to finish before your SWPPP is complete:

- Conduct a final review of your SWPPP; and
- Sign and certify your SWPPP

Review Your Draft SWPPP

You should review the SWPPP requirements in your industrial stormwater general permit to ensure that your SWPPP includes all required elements. For example, in the 2008 MSGP, the SWPPP requirements are in Part 5. Check off all the SWPPP permit requirements as you verify that they have been met. Also, develop a final copy of your site map and make sure that all required elements are addressed.

EPA recommends that you have both your stormwater pollution prevention team, and someone who was not involved in developing the SWPPP, review your draft SWPPP.

Sign and Certify Your SWPPP

The last step in completing your SWPPP is to have a facility executive or duly authorized representative of that executive sign and certify that the SWPPP meets all the requirements in the general permit. This signature demonstrates that the SWPPP was reviewed by someone who has operational control over the facility (i.e., can commit resources to implementing the SWPPP and ensuring compliance with the permit). You should check your general permit to determine which person is required to sign and certify the SWPPP. Note that the signatory requirements for the 2008 MSGP are found in Appendix B, Subsection 11 of EPA's 2008 MSGP.

6.B Obtain NPDES Permit Coverage

Important! Before obtaining permit coverage, you should read the appropriate industrial stormwater permit and develop your SWPPP.

Most permits require that you develop your SWPPP before you can obtain NPDES permit coverage for your industrial stormwater discharges. However, in some instances, the permit may provide you with additional time to complete or update a SWPPP after permit coverage is obtained. Nevertheless, it is recommended that your SWPPP be completed at least in draft form prior to applying for permit coverage, even in those States where additional time is granted.

Obtaining Coverage Under a General Permit

To obtain coverage under a State industrial stormwater general permit, you will typically need to fill out and submit an application form, often called a Notice of Intent or

NOI. Submitting an NOI form to the permitting authority indicates your certification that you have met the eligibility requirements for coverage under the permit, and your agreement to abide by the terms and conditions of the general permit. Depending on the permit, you may be authorized to discharge immediately or at some later time. In some cases, you are not authorized to discharge until the State has notified you accordingly. EPA's 2008 MSGP (see Part 1.3.1) uses a 30 to 60-day waiting period following the receipt of a facility's complete NOI. The waiting period expires when the permit's status changes from "waiting" to "active" on the Agency's eNOI website.

Read the application requirements in your general permit for information on the procedures and the specific form you will need to complete before becoming authorized. Some States charge an administrative fee to apply for permit coverage. Before submitting your application, you must also make sure that you meet all eligibility requirements in the permit. For example, if your facility discharges to one of several highly protected waters (e.g., a Tier 3 or "Outstanding Natural Resource Water"), you may not be eligible for coverage under a general permit and instead may have to file an application for individual permit coverage.

SWPPP Tip!

Documentation to Support Eligibility Considerations Under Other Federal Laws

The 2008 MSGP requires that you keep with your SWPPP the documentation supporting your eligibility pertaining to endangered species requirements, historic properties requirements, and NEPA review requirements described in the permit (see Part 5.1.6 of the permit). State industrial stormwater permits may have other documentation requirements.

6.C Updating Your SWPPP

Your SWPPP is a document that will need to be reviewed and updated on a regular basis. Whenever you find the need to change a procedure that is described in your SWPPP or to modify a control measure described therein, you must update the SWPPP to reflect those changes as quickly as practicable. Should the SWPPP require modification to document corrective actions, a new certification statement must be signed and dated upon completion of the revision.

Below are some examples of events that, if they result in a change in control measures or procedures, will require prompt revision of the SWPPP to reflect the new facility conditions.

- A change in the composition of the stormwater pollution prevention team or new responsible official.
- An unauthorized release or discharge (e.g., spill, leak, or discharge of non-stormwater not authorized by this or another NPDES permit) occurs at your facility.
- A discharge violates a numeric effluent limit.
- You become aware, or EPA determines, that your control measures are not stringent enough for the discharge to meet applicable water quality standards;
- An inspection or evaluation of your facility by an EPA official, or local, State, or Tribal entity, determines that modifications to the control measures are necessary to meet the non-numeric effluent limits in this permit.
- Construction or a change in design, operation, or maintenance at your facility significantly changes the nature of pollutants discharged in stormwater from your facility, or significantly increases the quantity of pollutants discharged.
- The average of four quarterly sampling results exceeds an applicable benchmark. If less than four benchmark samples have been taken, but the results are such that an exceedance of the 4 quarter average is mathematically certain (i.e., if the sum of quarterly sample results to date is more than 4 times the benchmark level) this is considered a benchmark exceedance, triggering a review of control measures and possible SWPPP modification.

Remember, revisions to the SWPPP to document corrective actions requires a new signed and dated certification statement by the responsible official. All other changes must be signed and dated by the person preparing the change.

SWPPP Tip!

In the interim between the annual inspection and completed SWPPP revision, keep a copy of the original SWPPP with your handwritten notes for SWPPP modifications at the facility. Should you be inspected before the revised SWPPP is complete, the copy with your notes can be used to demonstrate the changes that will be in the revised document.

Section 7: **Keeping Records of Your Implementation Activities**

Completing your SWPPP and obtaining NPDES permit coverage is an important step towards complying with your State or EPA Clean Water Act requirements. Having completed these steps, you are now ready to begin documenting your compliance with the requirements of your permit. EPA's 2008 MSGP and many State permits require you to keep records of any activities at your site that are related to your compliance, such as conducting inspections, visual assessments, stormwater discharge monitoring, and corrective actions.

As you conduct inspections, monitoring, corrective actions, and other permit implementation activities, you will generate additional records, such as inspection reports and monitoring results. Keep this additional documentation on-site with your SWPPP, and ensure these records are accessible, complete, and up-to-date so that they demonstrate your full compliance with the conditions of your permit.

Some examples of this additional documentation include:

- *Permit records* – copies of the NOI or permit application submitted, any letters received from the permitting authority, and a copy of your general permit.
- *Spill records* – dates of any incidences of significant spills, leaks, or other releases that resulted in a discharge of pollutants, the circumstances leading to the release, actions taken in response to the release, and measures taken to prevent the recurrence of a release.
- *Employee training records* – keep copies of all employee training records, including dates, who was trained, and the training topics.
- *Maintenance records* – retain copies of all maintenance and repairs of control measures, including dates of regular maintenance, dates when maintenance needs were discovered, and dates when control measures were returned to full function.
- *Inspection records* – keep copies of all routine facility inspection reports, quarterly visual assessment reports, and annual comprehensive site inspection reports.
- *Monitoring records* – retain records of all sampling results including data collection forms, lab results, and discharge monitoring reports (DMRs).
- *Corrective action records* – keep records of any corrective actions and follow-up activities conducted to demonstrate compliance with the permit.

SWPPP Tip!

For 2008 MSGP permit holders, the list of additional documentation requirements can be found in Part 5.4 of the permit. Also, EPA has developed an "Additional MSGP Documentation Template" with sample forms that you can download from **www.epa.gov/npdes/stormwater/msgp** to help you organize this information.

Section 8: Common Compliance Problems at Industrial Facilities

The following are common problems found during inspections of industrial sites conducted by EPA. These are provided to assist you in developing and maintaining an effective SWPPP. As a general matter, it is not enough to simply have a completed SWPPP at your site. To establish compliance with your permit's limits and conditions, you must also implement the procedures, and install and maintain the control measures, described in your SWPPP, and make modifications as necessary to improve your performance.

You should review these common compliance problems and consider how your SWPPP, or how your implementation of the procedures described in your SWPPP, can be modified to ensure you are not making the same mistakes.

1. **No SWPPP developed.** Some facilities do not realize that they need to develop a SWPPP, or they may copy a generic SWPPP or a SWPPP for another facility. A SWPPP is a site-specific plan and should address only your facility.
2. **Control measures described in SWPPP not used.** The SWPPP identifies stormwater control measures that are not actually being used at the site. The stormwater regulations hold you responsible for effectively implementing all control measures identified in your SWPPP. If your SWPPP has identified control measures not being used at your site, you need to edit your SWPPP accordingly to accurately reflect those measures you are in fact using.
3. **No SWPPP on-site.** A copy of the SWPPP is not available on-site for review when a permitting authority or other regulatory agency inspects your site. You are responsible for maintaining a copy on-site at all times. If your SWPPP is being updated off-site, keep a marked-up copy on-site or an electronic copy until the revised SWPPP arrives.
4. **SWPPP not signed.** The responsible facility representative did not sign and authorize the current version of the SWPPP.
5. **Stormwater pollution prevention team not up-to-date.** The stormwater pollution prevention team identified in the SWPPP is not current. This is particularly a problem at facilities with high turnover. Remember, you can identify team members by title rather than by name if high turnover makes it difficult to keep a current list of names.
6. **On-site staff not familiar with SWPPP.** Upon arrival of an inspector, no one familiar with the stormwater program is available. A common permit requirement is that at least one employee per shift is familiar with the stormwater program and has access to the relevant files.

Tetra Tech

Figure 16. Good housekeeping is probably the most common BMP in SWPPPs. Poor sweeping practices can contribute significant pollutants in stormwater runoff.

Tetra Tech

Figure 17. Leaking dumpsters can introduce pollutants into stormwater runoff.

SWPPP Tip!

SWPPP Availability – Keep a copy of the current, signed and certified SWPPP at your facility, and make it available to EPA, State, local agency or other regulatory agency staff at the time of an onsite inspection or upon request. The SWPPP should also be made easily available to facility staff, and should be readily referred to during regular facility operations to ensure that all activities are implemented as described in the SWPPP.

7. **Improper collection of visual assessment samples.** Visual stormwater samples are collected from pooled areas on site. Pooled areas tend to concentrate pollutants and are not representative, unless the contents of the pooled areas flow off of the facility (this is to your disadvantage).
8. **Uncovered dumpsters.** Dumpsters that receive metal waste are not covered or contained. Dumpsters from contract waste collection agencies are often not appropriately sealed and can leak oils or other contaminants.
9. **Poor employee/contract staff training.** Employees or contract staff are not familiar with your stormwater management program. You are responsible for educating employees and contractors because if they release pollutants at your facility, you are responsible. If you use contractors, they should be referred to in your SWPPP and required to be trained as a part of the contract.
10. **Inspection or monitoring records are not kept with the SWPPP.** Records of routine site inspections, visual assessments, or monitoring results are not available with the SWPPP for review. All records on implementation of practices required in the permit must be kept with the SWPPP (see Section 6.C for more information).

Resources

EPA, 2008 Multi-Sector General Permit, issued September 29, 2008 (available at **www.epa.gov/npdes/stormwater/msgp**).

EPA's Stormwater Website – **www.epa.gov/npdes/stormwater**

Industrial Stormwater Resource Locator – **www.envcap.org/iswrl/**

EPA's Industrial Stormwater Website – **www.epa.gov/npdes/stormwater/indust**

EPA's 2008 MSGP Website – **www.epa.gov/npdes/stormwater/msgp**

The Industrial Stormwater and MSGP Websites have a number of resources and tools to aid MSGP permittees, which include:

- *Annual Reporting Form* – Permittees can use this form to report their annual comprehensive site inspection and corrective actions to EPA.
- *Conditional "No Exposure" Exclusion* – Industrial facilities can use this form to certify that their industrial materials and operations are not exposed to stormwater.
- *Developing your Stormwater Pollution Prevention Plan: A Guide for Industrial Operators* – Provides guidance on how to develop a SWPPP that meets the requirements of the 2008 MSGP.
- *Electronic Notice of Intent (eNOI) System* – Allows permittees to quickly apply for permit coverage under EPA's 2008 MSGP.
- *Industrial Stormwater Monitoring and Sampling Guide* – Provides guidance on how to meet the monitoring and sampling requirements in the 2008 MSGP.
- *Industrial Sector Fact Sheets* – These fact sheets summarize the types of facilities included that sector, the pollutants associated with this sector, and the types of stormwater control measures generally used.
- *List of Tier 2 and Tier 3 Waters* – Lists of waters currently designated by states as Tier 2 or Tier 3 for antidegradation purposes to help you complete your NOI.
- *MSGP Discharge Monitoring Report (MDMR)* – Permittees can use this paper copy form to submit monitoring data to EPA.
- *Reporting MSGP Monitoring Data* – Allows permittees to electronically file all benchmark, effluent limitation guidelines, and impaired waters monitoring data through the eNOI system.
- *Sample MSGP SWPPP Template* – Industrial facilities can use the "Industrial SWPPP Template" to create their own SWPPPs.
- *Sample Recordkeeping Templates* – Use the sample templates and forms to keep records of your monitoring, inspection, maintenance, visual evaluation, and corrective action activities.
- *Search, Sort, and View Industrial NOIs* – Searchable database of stormwater notices of intent (NOIs) for industrial facilities seeking coverage under EPA's MSGP.
- *Water Locator Tool* – Helps industrial facilities pinpoint their site's latitude and longitude, receiving water, and impairment status of the water, applicable total maximum daily loads (TMDLs), and potential pollutants of concern.

EPA's NPDES Authorization Status Website – **www.epa.gov/npdes/stormwater/authorizationstatus**

EPA's Menu of National Stormwater BMPs – **www.epa.gov/npdes/stormwater/menuofbmps**

Industrial Stormwater Permit Guide – **www.pneac.org/stormwater/**

Appendix A: **MSGP SWPPP Template**

EPA has created a template to assist operators in developing an industrial SWPPP that addresses the requirements in the 2008 MSGP. The template includes instructions and space to help operators document activities specific to their facility, such as:

- Facility Description and Contact Information
- Potential Pollutant Sources
- Stormwater Control Measures
- Schedules and Procedures for Monitoring
- Inspections
- Documentation to Support Eligibility Considerations under Other Federal Laws
- SWPPP Certification
- SWPPP Modifications
- SWPPP Attachments

A customizable Microsoft Word version of the MSGP SWPPP Template is available for download from **www.epa.gov/npdes/stormwater/msgp**.

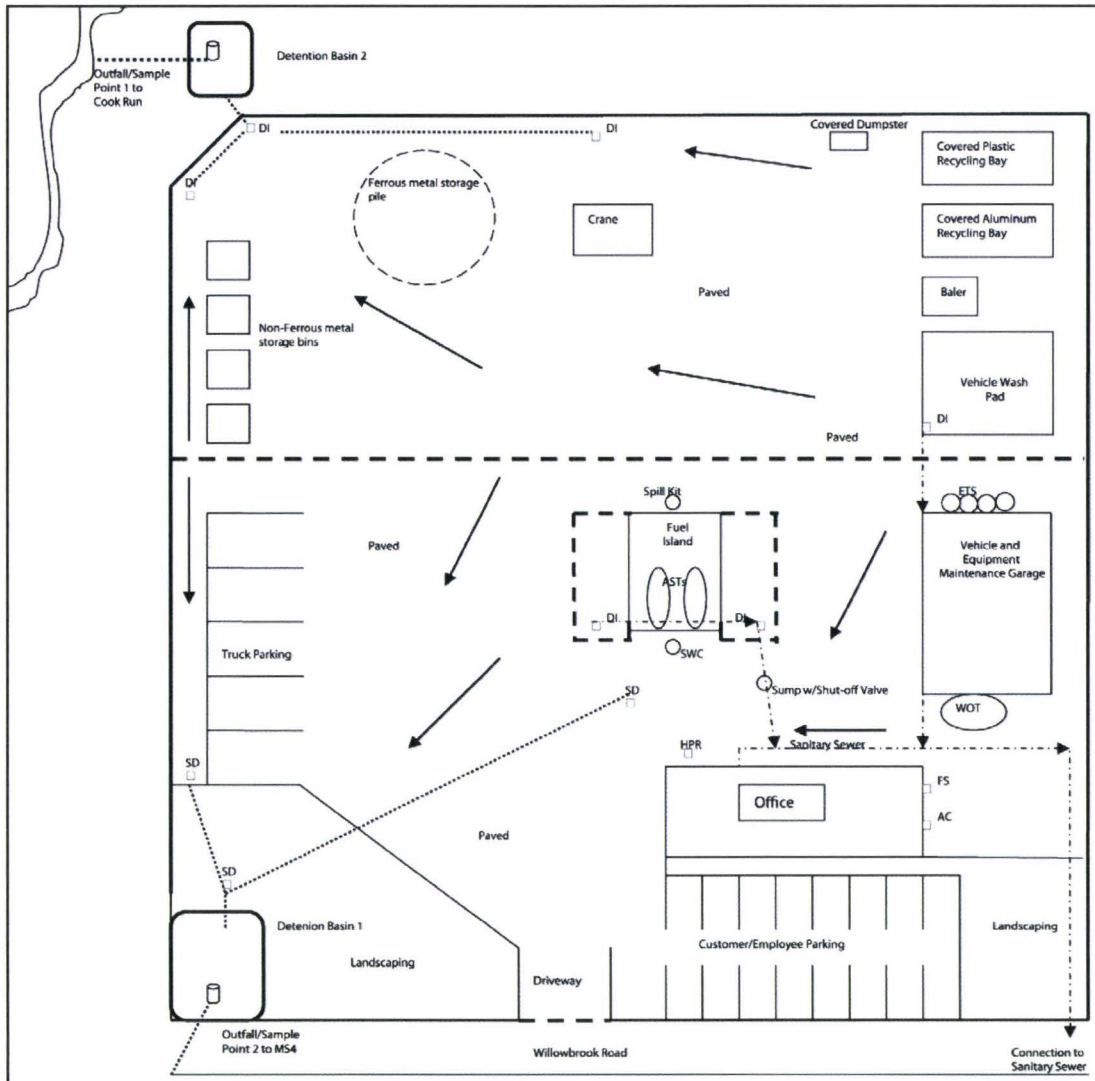
Appendix B: **Additional MSGP Documentation Template**

EPA has created a template to assist 2008 MSGP permit holders in collecting the additional documentation required during implementation of the permit. The Additional MSGP Documentation Template includes example forms and tables to help permittees document activities related to:

- Significant spills, leaks or other releases
- Employee training
- Maintenance
- Routine Facility Inspection Reports
- Quarterly Visual Assessment Reports
- Comprehensive Site Inspection Reports
- Monitoring results
- Deviations from assessment or monitoring schedule
- Benchmark Exceedances
- Impaired Waters Monitoring: Documentation of Natural Background Sources or Non-Presence of Impairment Pollutant
- Active/Inactive status change
- SWPPP Amendment Log

The Additional MSGP Documentation template can be downloaded in Microsoft Word format at **www.epa.gov/npdes/stormwater/msgp**.

Appendix C: Example Site Map



Map Notes:
- All interior floor drains, including the vehicle washarea and fuel island, discharge to the municipal sanitary sewer system.
- All SDs are part of the MS4. Contact the City of Anywhere Public Works Department, Stormwater Management Division at (111) 999-0001 concerning significant inspection findings associated with these storm drains.

Acme Scrap Metal Recycling Yard Site Map

110 Willowbrook Road, Anywhere, USA 00011
SWPPP Contact: John Doe (111) 999-0000

Symbols:
- Speed Bump
- Concrete Curbing - Approximate Facility Operation
- Area Boundry
- Storm Sewer
- Sanitary Sewer
- Flow Path

Acronym List:

SD	Storm Drain
DI	Drop Inlet
SWC	Solid Waste Can (General Location)
WOT	Waste Oil Tank
ETS	Empty Tank Storage
AST	Above Ground Storage Tank
MS4	Municipal Separate Storm Sewer System

Authorized Non-Stormwater Discharges:

HPR	Hot Water Heater Pressure Relief Pipe (potable water)
AC	Air Conditioning Condensate
FS	Fire Suppression System Test Discharge (potable water)

Spills:
Minor fuel spill on fuel island – July 20, 2007

Potential Pollutant Source:	Potential Pollutants:
Vehicle and Equipment Maintenance Garage	Fuel , oil, antifreeze, grease, hydraulic Fluid, brake Fluid, solvents, transmission fluid, parts washer, and paint
WOT: Waste Oil Tank	Aboveground 500-gallon waste oil tank
ETS: Empty Tank Storage	Residual oil, lubricants, hydraulic fluid
SWC: Solid Waste Can	
AST: Above Ground Storage Tank	Two 1000 gallon ASTs, Diesel and Gasoline
Covered Aluminum Recycling Bay	Aluminum
Covered Plastic Recycling Bay	Plastic
Baler	Hydraulic fluid, grease, aluminum, plastic
Crane	Hydraulic fluid, oil, grease, fuel
Ferrous metal storage pile	Ferric metals
Non-Ferrous metal storage bins	Non-Ferric metals
Truck Parking	Oil, grease, fuel

Impervious Surface Estimate
(% of total facility area): 90%
Total Facility Size (acres): 6.5

APPENDIX I

APPENDIX I

MDNR Sector Factsheet/Guide

INDUSTRIAL STORMWATER

FACT SHEET SERIES

Sector D: Asphalt Paving and Roofing Materials Manufacturers and Lubricant Manufacturers

U.S. EPA Office of Water
EPA-833-F-06-019
December 2006

What is the NPDES stormwater permitting program for industrial activity?

Activities, such as material handling and storage, equipment maintenance and cleaning, industrial processing or other operations that occur at industrial facilities are often exposed to stormwater. The runoff from these areas may discharge pollutants directly into nearby waterbodies or indirectly via storm sewer systems, thereby degrading water quality.

In 1990, the U.S. Environmental Protection Agency (EPA) developed permitting regulations under the National Pollutant Discharge Elimination System (NPDES) to control stormwater discharges associated with eleven categories of industrial activity. As a result, NPDES permitting authorities, which may be either EPA or a state environmental agency, issue stormwater permits to control runoff from these industrial facilities.

What types of industrial facilities are required to obtain permit coverage?

This fact sheet discusses stormwater discharges from asphalt paving and roofing materials manufacturers and lubricant manufacturers as described by Standard Industrial Classification (SIC) Major Group 29. Only facilities that perform the following operations require coverage under an industrial stormwater permit:

- Asphalt paving mixtures and blocks (SIC 2951)
- Asphalt felts and coatings (SIC 2952)
- Lubricating oils and lubricating oils and greases (SIC 2992)
- Products of petroleum and coal not elsewhere classified (SIC 2999)

Not discussed in this fact sheet are renderers of fats and oils (see Fact Sheet U (EPA-833-F-06-036) for food and kindred products), oil recycling facilities (see Fact Sheet N (EPA-833-F-06-029) for scrap recycling facilities), or petroleum refining facilities.

What does an industrial stormwater permit require?

Common requirements for coverage under an industrial stormwater permit include development of a written stormwater pollution prevention plan (SWPPP), implementation of control measures, and submittal of a request for permit coverage, usually referred to as the Notice of Intent or NOI. The SWPPP is a written assessment of potential sources of pollutants in stormwater runoff and control measures that will be implemented at your facility to minimize the discharge of these pollutants in runoff from the site. These control measures include site-specific best management practices (BMPs), maintenance plans, inspections, employee training, and reporting. The procedures detailed in the SWPPP must be implemented by the facility and updated as necessary, with a copy of the SWPPP kept on-site. The industrial stormwater permit also requires collection of visual, analytical, and/or compliance monitoring data to determine the effectiveness of implemented BMPs. For more information on EPA's industrial stormwater permit and links to State stormwater permits, go to **www.epa.gov/npdes/stormwater** and click on "Industrial Activity."

What pollutants are associated with activities at my facility?

Pollutants conveyed in stormwater discharges from facilities involved with the manufacturing of asphalt, roofing materials, and lubricants will vary. There are a number of factors that influence to what extent industrial activities and significant materials can affect water quality.

- Geographic location
- Topography
- Hydrogeology
- Extent of impervious surfaces (e.g., concrete or asphalt)
- Type of ground cover (e.g., vegetation, crushed stone, or dirt)
- Outdoor activities (e.g., material storage, loading/unloading, vehicle maintenance)
- Size of the operation
- Type, duration, and intensity of precipitation events

The activities, pollutant sources, and pollutants detailed in Table 1 are commonly found at asphalt paving and roofing materials manufacturers and lubricant manufacturing facilities.

Table 1. Common Activities, Pollutant Sources, and Associated Pollutants at Asphalt Paving and Roofing Materials Manufacturers and Lubricant Manufacturing Facilities

Activity	Pollutant Source	Pollutant
Asphalt Paving and Roofing Materials		
Outdoor stockpiling of materials	Exposure of aggregate (sand, stone, limestone, gravel, etc.) to precipitation	Total suspended solids (TSS), total dissolved solids (TDS) biochemical oxygen demand (BOD5), chemical oxygen demand (COD), oil and grease (O&G), benzene, methylene blue active substances (MBAS), metals, pH
Storage of materials in above-ground tanks	Leakage from tanks	TSS, TDS, BOD5, COD, O&G, benzene, MBAS, metals, pH
Transport of materials by a conveyor or front-end loader	Exposed materials and potential spills	TSS, TDS, BOD5, COD, O&G, benzene, MBAS, metals, pH
Lubricating Oils and Greases		
Storage of raw materials	Spills and leaks of materials from tank farms or 55-gallon drums	Petroleum or synthetic-based stocks and various additives, O&G, pH
Vehicle and equipment maintenance	Parts cleaning, waste disposal of rags, oil filters, air filters, batteries, hydraulic fluids, transmission fluids, brake fluids, coolants, lubricants, degreasers, spent solvents	Gas/diesel fuel, fuel additives, oil/lubricants, heavy metals, brake fluids, transmission fluids, chlorinated solvents, arsenic
Vehicle and equipment fueling	Spills and leaks during fuel transfer, spills due to "topping off" tanks, runoff from fueling areas, washdown of fueling areas, leaking storage tanks, spills of oils, brake fluids, transmission fluids,	Gas/diesel fuel, fuel additives, oil, lubricants, heavy metals

What BMPs can be used to minimize contact between stormwater and potential pollutants at my facility?

A variety of BMP options may be applicable to eliminate or minimize the presence of pollutants in stormwater discharges from asphalt paving and roofing materials manufacturers and lubricant manufacturing facilities. You will likely need to implement a combination or suite of BMPs to address stormwater runoff at your facility. Your first consideration should be for pollution prevention BMPs,

which are designed to prevent or minimize pollutants from entering stormwater runoff and/or reduce the volume of stormwater requiring management. Prevention BMPs can include regular cleanup, collection and containment of debris in storage areas, and other housekeeping practices, spill control, and employee training. It may also be necessary to implement treatment BMPs, which are engineered structures intended to treat stormwater runoff and/or mitigate the effects of increased stormwater runoff peak rate, volume, and velocity. Treatment BMPs are generally more expensive to install and maintain and include oil-water separators, wet ponds, and proprietary filter devices.

BMPs must be selected and implemented to address the following:

Good Housekeeping Practices

Good housekeeping is a practical, cost-effective way to maintain a clean and orderly facility to prevent potential pollution sources from coming into contact with stormwater. It includes establishing protocols to reduce the possibility of mishandling materials or equipment and training employees in good housekeeping techniques. Common areas where good housekeeping practices should be followed include trash containers and adjacent areas, material storage areas, vehicle and equipment maintenance areas, and loading docks. Good housekeeping practices must include a schedule for regular pickup and disposal of garbage and waste materials and routine inspections of drums, tanks, and containers for leaks and structural conditions. Practices also include containing and covering garbage, waste materials, and debris. Involving employees in routine monitoring of housekeeping practices has proven to be an effective means of ensuring the continued implementation of these measures.

Minimizing Exposure

Where feasible, minimizing exposure of potential pollutant sources to precipitation is an important control option. Minimizing exposure prevents pollutants, including debris, from coming into contact with precipitation and can reduce the need for BMPs to treat contaminated stormwater runoff. It can also prevent debris from being picked up by stormwater and carried into drains and surface waters. Examples of BMPs for exposure minimization include covering materials or activities with temporary structures (e.g., tarps) when wet weather is expected or moving materials or activities to existing or new permanent structures (e.g., buildings, silos, sheds). Even the simple practice of keeping a dumpster lid closed can be a very effective pollution prevention measure.

Erosion and Sediment Control

BMPs must be selected and implemented to limit erosion on areas of your site that, due to topography, activities, soils, cover, materials, or other factors are likely to experience erosion. Erosion control BMPs such as seeding, mulching, and sodding prevent soil from becoming dislodged and should be considered first. Sediment control BMPs such as silt fences, sediment ponds, and stabilized entrances trap sediment after it has eroded. Sediment control BMPs should be used to back-up erosion control BMPs.

Management of Runoff

Your SWPPP must contain a narrative evaluation of the appropriateness of stormwater management practices that divert, infiltrate, reuse, or otherwise manage stormwater runoff so as to reduce the discharge of pollutants. Appropriate measures are highly site-specific, but may include, among others, vegetative swales, collection and reuse of stormwater, inlet controls, snow management, infiltration devices, and wet retention measures.

A combination of preventive and treatment BMPs will yield the most effective stormwater management for minimizing the offsite discharge of pollutants via stormwater runoff. Though not specifically outlined in this fact sheet, BMPs must also address preventive maintenance records or logbooks, regular facility inspections, spill prevention and response, and employee training.

All BMPs require regular maintenance to function as intended. Some management measures have simple maintenance requirements, others are quite involved. You must regularly inspect all BMPs to ensure they are operating properly, including during runoff events. As soon as a problem is found, action to resolve it should be initiated immediately.

Implement BMPs, such as those listed below in Table 2 for the control of pollutants at asphalt paving and roofing materials manufacturers and lubricant manufacturing facilities, to minimize and prevent the discharge of pollutants in stormwater. Identifying weaknesses in current facility practices will aid the permittee in determining appropriate BMPs that will achieve a reduction in pollutant loadings. BMPs listed in Table 2 are broadly applicable to asphalt paving and roofing materials manufacturers and lubricant manufacturing facilities; however, this is not a complete list and you are recommended to consult with regulatory agencies or a stormwater engineer/consultant to identify appropriate BMPs for your facility.

Table 2. BMPs for Potential Pollutant Sources at Asphalt Paving and Roofing Materials Manufacturers and Lubricant Manufacturing Facilities

Pollutant Source	BMPs
Material storage, handling, and processing	❑ Cover material storage and handling areas with an awning, tarp, or roof. ❑ Confine storage to designated and labeled areas outside of drainage pathways and away from surface waters ❑ Practice good stockpiling practices such as: storing materials on concrete or asphalt pads; surrounding stockpiles with diversion dikes or curbs; and revegetating areas used for stockpiling in order to slow runoff. ❑ Use curbing, diking, or channelization around material storage, handling and processing areas to divert run-on around areas where it can come into contact with material stored or spilled on the ground. ❑ Utilize secondary containment measures such as dikes or berms around asphalt storage tanks and fuel oil tanks. ❑ Use dust collection systems (i.e., baghouses) to collect airborne particles generated as a result of material handling operations or aggregate drying. ❑ Promptly dispose of waste materials from dust collection systems and other operations. ❑ Remove spilled material and dust from paved portions of the facility by shoveling and sweeping on a regular basis. ❑ Utilize catch basins to collect potentially contaminated stormwater. ❑ Develop and implement spill prevention plans to prevent contact of runoff with spills of significant materials. ❑ Clean material handling equipment and vehicles to remove accumulated dust and residue on a regular basis. ❑ Use a detention pond or sedimentation basin to reduce suspended solids. ❑ Use an oil/water separator to reduce the discharge of oil/grease. ❑ Maintain up-to-date material inventory. ❑ Maintain dry, clean floors and ground surfaces. ❑ Train employees in good housekeeping, spill prevention and control, and materials management procedures.

Table 2. BMPs for Potential Pollutant Sources at Asphalt Paving and Roofing Materials Manufacturers and Lubricant Manufacturing Facilities (continued)

Pollutant Source	BMPs
Storage of Petroleum, synthetic-based stocks and additives	❑ If area is uncovered, connect sump outlet to sanitary sewer (if possible) or an oil/water separator, catch basin filter, etc. If connecting to a sanitary sewer check with the system operator to ensure that the discharge is acceptable. If implementing separator or filter technologies ensure that regular inspections and maintenance procedures are in place. ❑ Develop and implement spill plans. ❑ Train employees in spill prevention and control. Above ground tanks ❑ Provide secondary containment, such as dikes, with a height sufficient to contain a spill (the greater of 10 percent of the total enclosed tank volume or 110 percent of the volume contained in the largest tank). ❑ If containment structures have drains, ensure that the drains have valves, and that valves are maintained in the closed position. Institute protocols for checking/testing stormwater in containment areas prior to discharge. ❑ Use double-walled tanks with overflow protection. ❑ Keep liquid transfer nozzles/hoses in secondary containment area. Portable containers/drums ❑ Keep liquid transfer nozzles/hoses in secondary containment area. ❑ Store drums indoors when possible. ❑ Store drums, including empty or used drums, in secondary containment with a roof or cover (including temporary cover such as a tarp that prevents contact with precipitation). ❑ Provide secondary containment, such as dikes or portable containers, with a height sufficient to contain a spill (the greater of 10 percent of the total enclosed tank volume or 110 percent of the volume contained in the largest tank). ❑ Clearly label drum with its contents.
Vehicle and equipment fueling	❑ Conduct fueling operations (including the transfer of fuel from tank trucks) on an impervious or contained pad or under a roof or canopy where possible. Covering should extend beyond spill containment pad to prevent rain from entering. ❑ When fueling in uncovered area, use a concrete pad (asphalt is not chemically resistant to the fuels being handled). ❑ Use drip pans where leaks or spills of fuel can occur and where making and breaking hose connections. ❑ Use fueling hoses with check valves to prevent hose drainage after filling. ❑ Use spill and overflow protection devices. ❑ Keep spill cleanup material readily available. Clean up spills and leaks immediately. ❑ Minimize/eliminate run-on into fueling areas with diversion dikes, berms, containment trenches, curbing or other equivalent measures. ❑ Collect stormwater runoff and provide treatment or recycling. ❑ Use dry cleanup methods for fuel area rather than hosing down the fuel area. Follow procedures for sweeping up absorbents as soon as spilled substances have been absorbed. ❑ Provide curbing or posts around fuel pumps to prevent collisions from vehicles. ❑ Discourage "topping off" of fuel tanks. ❑ Regularly inspect and perform preventive maintenance on fuel storage tanks to detect potential leaks before they occur. ❑ Inspect the fueling area for leaks and spills. ❑ Train employees on vehicle fueling BMPs.

Table 2. BMPs for Potential Pollutant Sources at Asphalt Paving and Roofing Materials Manufacturers and Lubricant Manufacturing Facilities (continued)

Pollutant Source	BMPs
Vehicle and equipment maintenance	Good Housekeeping ❑ Eliminate floor drains that are connected to the storm or sanitary sewer; if necessary, install a sump that is pumped regularly. Collected wastes should be properly treated or disposed of by a licensed waste hauler. ❑ Do all cleaning at a centralized station so the solvents stay in one area. ❑ If parts are dipped in liquid, remove them slowly to avoid spills. ❑ Use drip pans, drain boards, and drying racks to direct drips back into a fluid holding tank for reuse. ❑ Drain all parts of fluids prior to disposal. Oil filters can be crushed and recycled. ❑ Promptly transfer used fluids to the proper container; do not leave full drip pans or other open containers around the shop. Empty and clean drip pans and containers. ❑ Clean up leaks, drips, and other spills without using large amounts of water. Use absorbents for dry cleanup whenever possible. ❑ Prohibit the practice of hosing down an area where the practice would result in the discharge of pollutants to a stormwater system. ❑ Do not pour liquid waste into floor drains, sinks, outdoor storm drain inlets, or other storm drains or sewer connections. ❑ Maintain an organized inventory of materials. ❑ Eliminate or reduce the number and amount of hazardous materials and waste by substituting nonhazardous or less hazardous materials. ❑ Label and track the recycling of waste material (e.g., used oil, spent solvents, batteries). ❑ Store batteries and other significant materials indoors. ❑ Dispose of greasy rags, oil filters, air filters, batteries, spent coolant, and degreasers in compliance with RCRA regulations. Minimizing Exposure ❑ Perform all cleaning operations indoors or under covering when possible. Conduct the cleaning operations in an area with a concrete floor with no floor drainage other than to sanitary sewers or treatment facilities. ❑ If operations are uncovered, perform them on concrete pad that is impervious and contained. ❑ Park vehicles and equipment indoors or under a roof whenever possible and maintain proper control of oil leaks/spills. ❑ Check vehicles closely for leaks and use pans to collect fluid when leaks occur. Management of Runoff ❑ Use berms, curbs, grassed swales or other diversion measures to ensure that stormwater runoff from other parts of the facility does not flow over the maintenance area. ❑ Collect the stormwater runoff from the cleaning area and provide treatment or recycling. Discharge vehicle wash or rinse water to the sanitary sewer (if allowed by sewer authority), wastewater treatment, a land application site, or recycle onsite. DO NOT discharge washwater to a storm drain or to surface water. Inspections and Training ❑ Inspect the maintenance area regularly to ensure BMPs are implemented. ❑ Train employees on proper waste control and disposal procedures.

What if activities and materials at my facility are not exposed to precipitation?

The industrial stormwater program requires permit coverage for a number of specified types of industrial activities. However, when a facility is able to prevent the exposure of ALL relevant activities and materials to precipitation, it may be eligible to claim no exposure and qualify for a waiver from permit coverage.

If you are regulated under the industrial permitting program, you must either obtain permit coverage or submit a no exposure certification form, if available. Check with your permitting authority for additional information as not every permitting authority program provides no exposure exemptions.

Where do I get more information?

For additional information on the industrial stormwater program see **www.epa.gov/npdes/stormwater/msgp**.

A list of names and telephone numbers for each EPA Region or state NPDES permitting authority can be found at **www.epa.gov/npdes/stormwatercontacts**.

References

Information contained in this Fact Sheet was compiled from EPA's past and current Multi-Sector General Permits and from the following sources:

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- Orange County, California, Watershed & Coastal Resources Division. Concrete and Asphalt Production, Application, and Cutting.
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  www.co.pierce.wa.us/xml/services/home/environ/water/cip/swmmanual/stakeholders/SWMM%20V4-C4_1.pdf
- USEPA. 1992. Stormwater Management for Industrial Activities: Developing Pollution Prevention Plans and Best Management Practices. EPA-832-R-92-006.
  www.epa.gov/npdes/stormwater
- USEPA Office of Science and Technology. 1999. Preliminary Data Summary of Urban Stormwater Best Management Practices. EPA-821-R-99-012
  www.epa.gov/OST/stormwater/
- USEPA, Office of Wastewater Management. NPDES Stormwater Multi-Sector General Permit for Industrial Activities (MSGP).
  www.epa.gov/npdes/stormwater/msgp

APPENDIX J

Appendix J

Comprehensive Pollutant Source and BMP Guide

Table 3.2 Comprehensive Possible Pollutant Source and BMP Guide

Pollutant Source	BMPs
Metal Fabricating Areas	Sweep fabrication areas frequently to avoid heavy accumulation of steel ingots, fines, and scrap.
	Absorb dust through a vacuum system to avoid accumulation on roof tops and onto the ground.
	Sweep all accessible paved areas on a regular basis.
	Maintain floors in a clean and dry condition using dry cleanup techniques.
	Remove waste and dispose of regularly.
	Train employees on good housekeeping measures.
Raw Material Storage Areas	Store materials in a covered area whenever possible.
	Organize storage areas so there is easy access in case of a spill.
	Label stored materials to aid in identifying spill contents.
	Minimize the amount of material stored to avoid corrosive activity from long-term exposed materials.
	Dike or berm the area to prevent or minimize run-on.
	Keep area neat and orderly; stack neatly on pallets or off the ground.
	Cover exposed materials.
Receiving, Unloading, & Loading Areas	Conine loading/unloading activities to designated areas outside drainage pathways and away from surface waters.
	Close storm drains during loading/unloading activities in surrounding areas.
	Use a dead-end sump where materials could be directed.
	Inspect containers for leaks or damage prior to loading/unloading.
	Avoid loading/unloading materials in the rain or provide cover or other protection for loading docks.
	Provide diversion berms, dikes or grassed swales around the perimeter of the area to limit run-on.
	Cover loading and unloading areas and perform these activities on an impervious pad to enable easy collection of spilled materials.
	Slope the impervious concrete floor or pad to collect spills and leaks and convey them to proper containment and treatment.
	Provide overhangs or door skirts to enclose trailer ends at truck loading/unloading docks.
	For rail transfer, a drip pan shall be installed within the rails to collect spillage from the tank.
	Where liquid or powdered materials are transferred in bulk to/from truck or rail cars, ensure hose connection points at storage containers are inside containment areas, or drip pans are used in areas where spillage may occur which are not in a containment area.
	Enclose material handling systems.
	Cover materials entering and leaving areas.
	Use dry cleanup methods instead of washing the areas down.
	Regularly sweep area to minimize debris on the ground.
	Provide dust control if necessary. When controlling dust, sweep and/or apply water or materials that will not impact surface or ground water.
	Develop and implement spill prevention, containment, and countermeasure (SPCC) plans.
	Train employees in spill prevention, control, cleanup, and proper materials management techniques.

Pollutant Source	BMPs
Heavy Equipment Storage Areas	Vehicles should be stored indoors when possible.
	Provide covering for outdoor storage areas.
	Divert drainage to the grass swales, filter strips, retention ponds, or holding tanks.
	Direct drainage systems away from high traffic areas into collection systems.
	Clean equipment prior to storage.
Metal Working Fluid Areas	Store used metal working fluid with fine metal dust indoors.
	Use tight sealing lids on all fluid containers.
	Use straw, clay absorbents, sawdust, or synthetic absorbents to conine or contain any spills.
	Establish recycling programs for used fluids when possible.
	Conduct daily inspections of each machine to identify problems and trends and reduce fluid waste.
	Use pumps, spigots, and funnels when transferring metal working fluid to reduce the amount of lost fluid and the risk of spilling fluids
	Fix leaking seals and gadgets to prevent leaks.
Unprotected Liquid Storage Tanks	If area is uncovered, connect sump outlet to sanitary sewer (if possible) or an oil/water separator, catch basin filter, etc. If connecting to a sanitary sewer check with the system operator to ensure that the discharge is acceptable. If implementing separator or filter technologies ensure that regular inspections and maintenance procedures are in place.
	Develop and implement spill plans.
	Train employees in spill prevention and control.
Above Ground Tanks	Provide secondary containment, such as dikes, with a height sufficient to contain a spill (the greater of 10 percent of the total enclosed tank volume or 110 percent of the volume contained in the largest tank).
	If containment structures have drains, ensure that the drains have valves, and that valves are maintained in the closed position. Institute protocols for checking/testing stormwater in containment areas prior to discharge.
	Use double-walled tanks.
	Keep liquid transfer nozzles/hoses in secondary containment area.
	Include overflow protection.
Portable containers/drums	Store drums indoors when possible.
	Store drums, including empty or used drums, in secondary containment with a roof or cover (including temporary cover such as a tarp that prevents contact with precipitation).
	Provide secondary containment, such as dikes or portable containers, with a height sufficient to contain a spill (the greater of 10 percent of the total enclosed tank volume or 110 percent of the volume contained in the largest tank).
	Clearly label drum with its contents.
Chemical cleaners and rinse water	Use drip pans and other spill devices to collect spills or solvents and other liquid cleaners.
	Recycle wastewater.
	Store recyclable waste indoors or in covered containers.
	Substitute nontoxic cleaning agents when possible.
Raw Steel Collection Areas	Keep collection areas clean.
	Keep materials in a covered storage bin or inside until pickup.
	Collect scrap metals, fines, iron dust and store under cover and recycle.

Pollutant Source	BMPs
Paints and Painting Equipment	Paint and sand indoors when possible.
	If done outside, enclose sanding and painting areas with tarps or plastic sheeting.
	Avoid painting and sandblasting operations outdoors in windy weather conditions.
	Use tarps, drip pans, or other spill collection devices to contain and collect spills.
	Use effective spray equipment that delivers more paint to the target and less overspray.
	Mix paints and solvents in designated areas away from drains, ditches, piers, and surface waters, preferably indoors or under cover
	Have absorbent and other cleanup items readily available for immediate cleanup of spills.
	Allow empty paint cans to dry before disposal.
	Keep paint and paint thinner away from traffic areas to avoid spills.
	Recycle paint, paint thinner, and solvents.
	Establish and implement effective inventory control to reduce paint waste, including tracking date received and expiration dates.
	Use water-based paints when possible.
	Train employees to use the spray equipment properly.
Metal Chip Storage Areas	Store waste chips indoors, if possible.
	Cover outdoors chip storage containers.
	Place chip storage containers on asphalt or concrete surfaces.
	Be sure fluid has completely drained before placing chips in storage containers.
	Continue draining fluids, if necessary. This can be done as simply as tilting containers towards one end and allowing excess fluids to drain through a hole into a residue container.
	Inspect area for leaks or spills.
	Monitor and maintain containers on a regular basis. Empty storage or residue containers and do not allow them to overflow.
Management of Runoff	Use berms, curbs, grassed swales or similar means to ensure that stormwater runoff from other parts of the facility does not flow over the maintenance area.
Equipment/Vehicle and Maintenance Areas Inspections and Training	Collect the stormwater runoff from the cleaning area and providing treatment or recycling.
	Discharge vehicle wash or rinse water to the sanitary sewer (if allowed by sewer authority), wastewater treatment, a land application site, or recycled on-site. Do not discharge wash water to a storm drain or to surface water.

Pollutant Source	BMPs
Vehicle Fueling	Conduct fueling operations (including the transfer of fuel from tank trucks) on an impervious or contained pad or under a roof or canopy where possible. Covering should extend beyond spill containment pad to prevent rain from entering.
	When fueling in uncovered area, use a concrete pad (not asphalt - not chemically resistant to the fuels being handled).
	Use drip pans where leaks or spills of fuel can occur and where making and breaking hose connections.
	Use fueling hoses with check valves to prevent hose drainage after filling.
	Use spill and overflow protection devices.
	Cleanup spills and leaks immediately.
	Minimize/eliminate run-on onto fueling areas.
	Collect stormwater runoff and provide treatment or recycling.
	Use dry cleanup methods for fuel area rather than hosing the fuel area down. Sweep up absorbents as soon as spilled substances have been absorbed.
	Regularly inspect and perform preventive maintenance on storage tanks to detect potential leaks before they occur.
	Inspect the fueling area for leaks and spills.
	Provide curbing or posts around fuel pumps to prevent collisions from vehicles.
	Discourage "topping off" of fuel tanks.
	Train personnel on vehicle fueling BMPs.
Vehicle and Equipment Cleaning	Designate vehicle and equipment wash areas that drain to recycle ponds or process wastewater treatment systems.
	Conduct vehicle washing operation indoors or in a covered area.
	Clean wash water residue from portions of the site that drain to stormwater discharges.
	Train employees on proper procedure for washing vehicles and equipment including a discussion of the appropriate location for vehicle washing.
Transporting Chemicals to Storage Areas	Store drums as close to operational building as possible.
	Label all drums with proper warning and handling instructions.
	Forklift operators should be trained to avoid puncturing drums.
Finished Products (Galvanized) Storage	Store finished products indoors, on a wooden pallets concrete pad, gravel surface, or other impervious surface.
Wooden Pallets and Empty Drums	Clean contaminated wooden pallets.
	Cover empty drums.
	Cover contaminated wooden pallets.
	Store drums and pallets indoors.
	Clean empty drums.
	Store pallets and drums on concrete pads.

Pollutant Source	BMPs
Hazardous Waste Storage Areas	Cover and/or enclose storage areas (including temporary cover such as a tarp that prevents contact with precipitation).
	All hazardous waste must be stored in sealed drums.
	Establish centralized satellite drum-storage areas.
	Provide secondary containment around chemical storage areas.
	If containment structures have drains, ensure that the drains have valves, and that valves are maintained in the closed position. Institute protocols for checking/testing stormwater in containment areas prior to discharge.
	Check for corrosion and leakage of storage containers.
	Label materials clearly.
	Properly dispose of outdated materials.
	Dike or use grass swales, ditches, or other containment to prevent run-on or runoff in case of spills.
	Post notices prohibiting dumping of materials into storm drains.
	Store containers, drums, and bags away from high traffic routes and surface waters.
	Do not stack containers in such a way as to cause leaks or damage to the containers.
	Use pallets to store containers when possible.
	Store materials with adequate space for traffic without disturbing drums.
	Maintain low inventory level of chemicals based on need.
	Train employees in spill prevention and control and proper hazardous waste management
	Eliminate floor drains that are connected to the storm or sanitary sewer; if necessary, install a sump that is pumped regularly.
	Prevent spills and drips.
	Use drip plans, drain boards, and drying racks to direct drips back into a sink or fluid holding tank for reuse.
	Drain all parts of fluids prior to disposal. Oil filters can be crushed and recycled.
	Promptly transfer used fluids to the proper container; do not leave full drip pans or other open containers around the shop. Empty and clean drip pans and containers.
	Dispose of greasy rags, oil filters, air filters, batteries, spent coolant, and degreasers properly.
	Label and track the recycling of waste material (e.g., used oil, spent solvents, batteries).
	Maintain an organized inventory of materials.
	Eliminate or reduce the number or amount of hazardous materials and waste by substituting nonhazardous or less hazardous materials.
	Clean up leaks, drips, and other spills without using large amounts of water.
	Prohibit the practice of hosing down an area where the practice would result in the exposure of pollutants to stormwater.
	Clean without using liquid cleaners whenever possible.
	Perform all cleaning at a centralized station so the solvents stay in one area.
	If parts are dipped in liquid, remove them slowly to avoid spills.
	Do not pour liquid waste down floor drains, sinks, outdoor storm drain inlets, or other storm drains or sewer connections.

Hazardous Waste Storage Areas	Perform all cleaning operations indoors or under covering when possible. Conduct the cleaning operations in an area with a concrete floor with no floor drainage other than to sanitary sewers or treatment facilities.
	If operations are uncovered, perform them on concrete pad that is impervious and contained.
	Park vehicles and equipment indoors or under a roof whenever possible and maintain proper control of oil leaks/spills.
	Inspect vehicles closely for leaks and use pans to collect fluid when leaks occur.

Attachment 4

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM – WATER POLLUTION BRANCH

ANNUAL OPERATIONS AND MAINTENANCE REPORT

MAIL TO: MISSOURI DEPARTMENT OF NATURAL RESOURCES, SOUTHEAST REGIONAL OFFICE 2155 NORTH WESTWOOD BLVD POPLAR BLUFF, MO 63901	ANNUAL REPORT DUE: JANUARY 28TH

PERMIT NUMBER	COUNTY	THIS REPORT COVERS YEAR:
MO-0136883	HOWELL	JANUARY 1, 2013 through DECEMBER 31, 2013

FACILITY NAME	PHONE #:	FACILITY ADDRESS
COASTAL ENERGY CORP.	417-469-2777	1 Coastal Drive, Willow Springs, MO

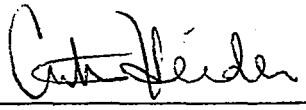
OWNER NAME	PHONE #:	OWNER ADDRESS
Coastal Energy Corp.	417-469-2777	P.O. Box 218, Willow Springs, MO 65793

Note 2 – Records shall be maintained and summarized into an annual operating report, which shall be submitted by January 28th of each year for the previous calendar year period. The report shall include the following:

(a) Record of maintenance and repairs performed during the year, average number of times per month the facility is checked to see if it is operating properly, and description of any unusual operating conditions encountered during the year;

(b) The number of days the facility discharged during the year, the discharge flow, the reasons discharge occurred and effluent analysis performed.

There was no discharge during 2013 and thus no irrigation occurred. Rainfall records for 2013 are attached. Since the irrigation system was not used, no maintenance or repairs were needed.

REPORT COMPLETED BY	DATE
Curtis Heider, Consultant 	1/16/14
SIGNATURE OF OWNER OR DESIGNEE APPROVING REPORT	DATE

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER POLLUTION CONTROL PROGRAM
MONTHLY MONITORING RECORD

DUE BY: JANUARY 28TH

NAME OF FACILITY	PERMIT NUMBER	COUNTY	REGION
COASTAL ENERGY CORP.	MO-0136883	HOWELL	SERO

OUTFALL: 001

DAY	January 2013		February 2013		March 2013	
	Rainfall Inches DAILY	Volume Pumped Gallons DAILY	Rainfall Inches DAILY	Volume Pumped Gallons DAILY	Rainfall Inches DAILY	Volume Pumped Gallons DAILY
1	.02	0	.01	0	0	0
2	0	0	0	0	0	0
3	0	0	0	0	0	0
4	0	0	.1	0	0	0
5	0	0	0	0	.01	0
6	0	0	0	0	0	0
7	0	0	.4	0	0	0
8	.12	0	0	0	0	0
9	.05	0	.01	0	0	0
10	.51	0	.63	0	1.2	0
11	.22	0	0	0	.01	0
12	1.65	0	0	0	0	0
13	.02	0	.14	0	0	0
14	0	0	0	0	0	0
15	0	0	0	0	0	0
16	0	0	0	0	0	0
17	0	0	0	0	.54	0
18	0	0	.29	0	.16	0
19	0	0	0	0	0	0
20	0	0	0	0	.3	0
21	0	0	.02	0	0	0
22	0	0	.52	0	.25	0
23	0	0	.22	0	.04	0
24	0	0	.01	0	.23	0
25	0	0	1.06	0	0	0
26	0	0	.49	0	0	0
27	.05	0	0	0	0	0
28	.01	0	0	0	0	0
29	1.35	0			.09	0
30	.24	0			0	0
31	0	0			.01	0
No. of Samp.						
Tot. of Samp.						
Daily Max.						

OUTFALL: 002

DAY	January 2013		February 2013		March 2013	
	Rainfall Inches DAILY	Volume Pumped Gallons DAILY	Rainfall Inches DAILY	Volume Pumped Gallons DAILY	Rainfall Inches DAILY	Volume Pumped Gallons DAILY
1	.02	0	.01	0	0	0
2	0	0	0	0	0	0
3	0	0	0	0	0	0
4	0	0	.01	0	0	0
5	0	0	0	0	.01	0
6	0	0	0	0	0	0
7	0	0	.4	0	0	0
8	.12	0	0	0	0	0
9	.05	0	.01	0	0	0
10	.51	0	.63	0	1.2	0
11	.22	0	0	0	.01	0
12	1.65	0	0	0	0	0
13	.02	0	.14	0	0	0
14	0	0	0	0	0	0
15	0	0	0	0	0	0
16	0	0	0	0	0	0
17	0	0	0	0	.54	0
18	0	0	.29	0	.16	0
19	0	0	0	0	0	0
20	0	0	0	0	.3	0
21	0	0	.02	0	0	0
22	0	0	.52	0	.25	0
23	0	0	.22	0	.04	0
24	0	0	.01	0	.23	0
25	0	0	1.06	0	0	0
26	0	0	.49	0	0	0
27	.05	0	0	0	0	0
28	.01	0	0	0	0	0
29	1.35	0			.09	0
30	.24	0			0	0
31	0	0			.01	0
No. of Samp.						
Tot. of Samp.						
Daily Max.						

Signature and Title of Individual Preparing Report:	Date:	Phone Number:	Email Address:
Signature of Owner or Designee Approving Report:	Date:	Phone Number:	Email Address:

Return form to: Missouri Department of Natural Resources, Southeast Regional Office, 2155 North Westwood Blvd. Poplar Bluff MO 63901

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER POLLUTION CONTROL PROGRAM
MONTHLY MONITORING RECORD

DUE BY: JANUARY 28TH

NAME OF FACILITY	PERMIT NUMBER	COUNTY	REGION
COASTAL ENERGY CORP.	MO-0136883	HOWELL	SERO

OUTFALL: 001

DAY	April 2013 Rainfall Inches DAILY	April 2013 Volume Pumped Gallons DAILY	May 2013 Rainfall Inches DAILY	May 2013 Volume Pumped Gallons DAILY	June 2013 Rainfall Inches DAILY	June 2013 Volume Pumped Gallons DAILY
1	0	0	0	0	1.35	0
2	.03	0	.68	0	0	0
3	0	0	.61	0	0	0
4	0	0	.02	0	.01	0
5	0	0	.21	0	.19	0
6	0	0	.08	0	0	0
7	0	0	.09	0	0	0
8	.04	0	0	0	0	0
9	0	0	.07	0	.09	0
10	1.19	0	.02	0	0	0
11	.01	0	.01	0	0	0
12	0	0	0	0	0	0
13	0	0	0	0	0	0
14	0	0	0	0	0	0
15	0	0	0	0	0	0
16	0	0	.07	0	.03	0
17	0	0	.13	0	.02	0
18	.88	0	0	0	.01	0
19	0	0	0	0	0	0
20	0	0	0	0	0	0
21	0	0	.53	0	0	0
22	0	0	0	0	.11	0
23	.03	0	0	0	0	0
24	.87	0	0	0	0	0
25	0	0	0	0	0	0
26	1.14	0	0	0	0	0
27	.71	0	0	0	0	0
28	0	0	0	0	.27	0
29	0	0	0	0	0	0
30	0	0	.19	0	.08	0
31			.8	0		
No. of Samp.						
Tot of Samp.						
Daily Max.						

OUTFALL: 002

DAY	April 2013 Rainfall Inches DAILY	April 2013 Volume Pumped Gallons DAILY	May 2013 Rainfall Inches DAILY	May 2013 Volume Pumped Gallons DAILY	June 2013 Rainfall Inches DAILY	June 2013 Volume Pumped Gallons DAILY
1	0	0	0	0	1.35	0
2	.03	0	.68	0	0	0
3	0	0	.61	0	0	0
4	0	0	.02	0	.01	0
5	0	0	.21	0	.19	0
6	0	0	.08	0	0	0
7	0	0	.09	0	0	0
8	.04	0	0	0	0	0
9	0	0	.07	0	.09	0
10	1.19	0	.02	0	0	0
11	.01	0	.01	0	0	0
12	0	0	0	0	0	0
13	0	0	0	0	0	0
14	0	0	0	0	0	0
15	0	0	0	0	0	0
16	0	0	.07	0	.03	0
17	0	0	.13	0	.02	0
18	.88	0	0	0	.01	0
19	0	0	0	0	0	0
20	0	0	0	0	0	0
21	0	0	.53	0	0	0
22	0	0	0	0	.11	0
23	.03	0	0	0	0	0
24	.87	0	0	0	0	0
25	0	0	0	0	0	0
26	1.14	0	0	0	0	0
27	.71	0	0	0	0	0
28	0	0	0	0	.27	0
29	0	0	0	0	0	0
30	0	0	.19	0	.08	0
31			.8	0		
No. of Samp.						
Tot of Samp.						
Daily Max.						

Signature and Title of Individual Preparing Report	Date	Phone Number:	Email Address.
Signature of Owner or Designee Approving Report	Date.	Phone Number	Email Address.

Return form to: Missouri Department of Natural Resources, Southeast Regional Office, 2155 North Westwood Blvd. Poplar Bluff MO 63901

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER POLLUTION CONTROL PROGRAM
MONTHLY MONITORING RECORD

DUE BY: JANUARY 28TH

NAME OF FACILITY	PERMIT NUMBER	COUNTY	REGION
COASTAL ENERGY CORP.	MO-0136883	HOWELL	SERO

OUTFALL: 001

DAY	July 2013		August 2013		September 2013	
	Rainfall Inches DAILY	Volume Pumped Gallons DAILY	Rainfall Inches DAILY	Volume Pumped Gallons DAILY	Rainfall Inches DAILY	Volume Pumped Gallons DAILY
1	.01	0	0	0	.07	0
2	0	0	0	0	0	0
3	0	0	.56	0	0	0
4	0	0	.13	0	0	0
5	.21	0	1.68	0	0	0
6	.01	0	2.62	0	0	0
7	0	0	.16	0	0	0
8	0	0	1	0	0	0
9	0	0	.05	0	0	0
10	0	0	0	0	0	0
11	0	0	0	0	1.23	0
12	0	0	0	0	.08	0
13	0	0	0	0	0	0
14	.04	0	0	0	0	0
15	.11	0	0	0	0	0
16	.01	0	0	0	0	0
17	0	0	0	0	0	0
18	0	0	0	0	0	0
19	0	0	0	0	0	0
20	0	0	0	0	.26	0
21	1.71	0	0	0	0	0
22	1.19	0	0	0	0	0
23	.5	0	0	0	0	0
24	0	0	0	0	0	0
25	0	0	0	0	0	0
26	.16	0	0	0	0	0
27	0	0	0	0	0	0
28	0	0	0	0	.07	0
29	0	0	0	0	.23	0
30	1.15	0	0	0	.01	0
31	0	0	0	0	.01	0
No. of Samp.						
Tot. of Samp.						
Daily Max.						

OUTFALL: 002

DAY	July 2013		August 2013		September 2013	
	Rainfall Inches DAILY	Volume Pumped Gallons DAILY	Rainfall Inches DAILY	Volume Pumped Gallons DAILY	Rainfall Inches DAILY	Volume Pumped Gallons DAILY
1	.01	0	0	0	.07	0
2	0	0	0	0	0	0
3	0	0	.56	0	0	0
4	0	0	.13	0	0	0
5	.21	0	1.68	0	0	0
6	.01	0	2.62	0	0	0
7	0	0	.16	0	0	0
8	0	0	1	0	0	0
9	0	0	.05	0	0	0
10	0	0	0	0	0	0
11	0	0	0	0	1.23	0
12	0	0	0	0	.08	0
13	0	0	0	0	0	0
14	.04	0	0	0	0	0
15	.11	0	0	0	0	0
16	.01	0	0	0	0	0
17	0	0	0	0	0	0
18	0	0	0	0	0	0
19	0	0	0	0	0	0
20	0	0	0	0	.26	0
21	1.71	0	0	0	0	0
22	1.19	0	0	0	0	0
23	.5	0	0	0	0	0
24	0	0	0	0	0	0
25	0	0	0	0	0	0
26	.16	0	0	0	0	0
27	0	0	0	0	0	0
28	0	0	0	0	.07	0
29	0	0	0	0	.23	0
30	1.15	0	0	0	.01	0
31			0	0	.01	0
No. of Samp.						
Tot. of Samp.						
Daily Max.						

Signature and Title of Individual Preparing Report:	Date:	Phone Number:	Email Address:
Signature of Owner or Designee Approving Report:	Date:	Phone Number:	Email Address:

Return form to: Missouri Department of Natural Resources, Southeast Regional Office, 2155 North Westwood Blvd. Poplar Bluff MO 63901

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER POLLUTION CONTROL PROGRAM
MONTHLY MONITORING RECORD

DUE BY: JANUARY 28TH

NAME OF FACILITY	PERMIT NUMBER	COUNTY	REGION
COASTAL ENERGY CORP.	MO-0136883	HOWELL	SERO

OUTFALL: 001

DAY	October 2013		November 2013		December 2013	
	Rainfall Inches DAILY	Volume Pumped Gallons DAILY	Rainfall Inches DAILY	Volume Pumped Gallons DAILY	Rainfall Inches DAILY	Volume Pumped Gallons DAILY
1	.01	0	.01	0	0	0
2	0	0	0	0	0	0
3	.04	0	0	0	.01	0
4	.01	0	.11	0	0	0
5	.75	0	.28	0	.15	0
6	.05	0	1.14	0	0	0
7	0	0	0	0	0	0
8	0	0	0	0	0	0
9	0	0	0	0	0	0
10	.01	0	0	0	.01	0
11	.01	0	0	0	.11	0
12	1.02	0	0	0	.12	0
13	0	0	0	0	.01	0
14	.02	0	0	0	.13	0
15	.23	0	.18	0	.09	0
16	.27	0	.01	0	.01	0
17	.03	0	.7	0	0	0
18	.11	0	0	0	0	0
19	.11	0	0	0	0	0
20	.01	0	0	0	.05	0
21	.02	0	1.48	0	2.12	0
22	.01	0	0	0	.01	0
23	0	0	0	0	0	0
24	0	0	0	0	0	0
25	0	0	.01	0	0	0
26	0	0	.01	0	0	0
27	0	0	0	0	0	0
28	0	0	0	0	0	0
29	.47	0	0	0	0	0
30	.26	0	0	0	0	0
31	.67	0	0	0	0	0
No. of Samp.						
Tot. of Samp.						
Daily Max.						

OUTFALL: 002

DAY	October 2013		November 2013		December 2013	
	Rainfall Inches DAILY	Volume Pumped Gallons DAILY	Rainfall Inches DAILY	Volume Pumped Gallons DAILY	Rainfall Inches DAILY	Volume Pumped Gallons DAILY
1	.01	0	.01	0	0	0
2	0	0	0	0	0	0
3	.04	0	0	0	.01	0
4	.01	0	.11	0	0	0
5	.75	0	.28	0	.15	0
6	.05	0	1.14	0	0	0
7	0	0	0	0	0	0
8	0	0	0	0	0	0
9	0	0	0	0	0	0
10	.01	0	0	0	.01	0
11	.01	0	0	0	.11	0
12	1.02	0	0	0	.12	0
13	0	0	0	0	.01	0
14	.02	0	0	0	.13	0
15	.23	0	.18	0	.09	0
16	.27	0	.01	0	.01	0
17	.03	0	.7	0	0	0
18	.11	0	0	0	0	0
19	.11	0	0	0	0	0
20	.01	0	0	0	.05	0
21	.02	0	1.48	0	2.12	0
22	.01	0	0	0	.01	0
23	0	0	0	0	0	0
24	0	0	0	0	0	0
25	0	0	.01	0	0	0
26	0	0	.01	0	0	0
27	0	0	0	0	0	0
28	0	0	0	0	0	0
29	.47	0	0	0	0	0
30	.26	0	0	0	0	0
31	.67	0	0	0	0	0
No. of Samp.						
Tot. of Samp.						
Daily Max.						

Signature and Title of Individual Preparing Report	Date	Phone Number	Email Address
Signature of Owner or Designee Approving Report:	Date:	Phone Number:	Email Address:

Return form to: Missouri Department of Natural Resources, Southeast Regional Office, 2155 North Westwood Blvd. Poplar Bluff MO 63901

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER POLLUTION CONTROL PROGRAM

DUE BY: JANUARY 28TH

MONTHLY MONITORING RECORD **FOR THE MONTH OF:** Jan , 2013

NAME OF FACILITY	PERMIT NUMBER	COUNTY	REGION
COASTAL ENERGY CORP.	MO-0136883	HOWELL	SERO

SAMPLES COLLECTED BY	ANALYSIS PERFORMED BY (LAB)	DATE

IRRIGATED STORMWATER **NO IRRIGATED STORMWATER FOR MONTH:** ☒

DAY	VOLUME IRRIGATED GALLONS DAILY	APPLICATION AREA ACRES DAILY	APPLICATION RATE INCHES/ACRE DAILY	ETHYL-BENZEN mg/L Once/month	OIL & GREASE mg/L Once/month	PETROLEUM HYDRO., TOTAL mg/L Once/month	pH SU Once/month	ETHANOL mg/L Once/month
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31								
No.of Samp.								
Tot of Samp.								
Monthly Avg.								
Daily Max.								

Signature and Title of Individual Preparing Report:	Date:	Phone Number:	Email Address:
Signature of Owner or Designee Approving Report:	Date:	Phone Number:	Email Address:

Return form to: Missouri Department of Natural Resources, Southeast Regional Office, 2155 North Westwood Blvd. Poplar Bluff MO 63901

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER POLLUTION CONTROL PROGRAM

DUE BY: JANUARY 28TH

MONTHLY MONITORING RECORD **FOR THE MONTH OF:** Feb , 20 13

NAME OF FACILITY	PERMIT NUMBER	COUNTY	REGION
COASTAL ENERGY CORP.	MO-0136883	HOWELL	SERO
SAMPLES COLLECTED BY		**ANALYSIS PERFORMED BY (LAB)**	**DATE**

IRRIGATED STORMWATER | **NO IRRIGATED STORMWATER FOR MONTH:** ☒

DAY	VOLUME IRRIGATED GALLONS DAILY	APPLICATION AREA ACRES DAILY	APPLICATION RATE INCHES/ACRE DAILY	ETHYL-BENZEN mg/L Once/month	OIL & GREASE mg/L Once/month	PETROLEUM HYDRO., TOTAL mg/L Once/month	pH SU Once/month	ETHANOL mg/L Once/month
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No.of Samp.								
Tot of Samp.								
Monthly Avg.								
Daily Max.								

Signature and Title of Individual Preparing Report:	Date:	Phone Number:	Email Address:
Signature of Owner or Designee Approving Report:	Date:	Phone Number:	Email Address:

Return form to: Missouri Department of Natural Resources, Southeast Regional Office, 2155 North Westwood Blvd. Poplar Bluff MO 63901

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER POLLUTION CONTROL PROGRAM

DUE BY: JANUARY 28TH

MONTHLY MONITORING RECORD **FOR THE MONTH OF:** March , 2013

NAME OF FACILITY	PERMIT NUMBER	COUNTY	REGION
COASTAL ENERGY CORP.	MO-0136883	HOWELL	SERO
SAMPLES COLLECTED BY		**ANALYSIS PERFORMED BY (LAB)**	**DATE**

IRRIGATED STORMWATER | **NO IRRIGATED STORMWATER FOR MONTH: ☒**

DAY	VOLUME IRRIGATED GALLONS DAILY	APPLICATION AREA ACRES DAILY	APPLICATION RATE INCHES/ACRE DAILY	ETHYL-BENZEN mg/L Once/month	OIL & GREASE mg/L Once/month	PETROLEUM HYDRO., TOTAL mg/L Once/month	pH SU Once/month	ETHANOL mg/L Once/month
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No.of Samp.								
Tot of Samp.								
Monthly Avg.								
Daily Max.								

Signature and Title of Individual Preparing Report:	Date:	Phone Number:	Email Address:
Signature of Owner ar Designee Approving Report:	Date:	Phone Number:	Email Address:

Return form to: Missouri Department of Natural Resources, Southeast Regional Office, 2155 North Westwood Blvd. Poplar Bluff MO 63901

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER POLLUTION CONTROL PROGRAM

DUE BY: JANUARY 28TH

MONTHLY MONITORING RECORD **FOR THE MONTH OF:** April , 20 13

NAME OF FACILITY	PERMIT NUMBER	COUNTY	REGION
COASTAL ENERGY CORP.	MO-0136883	HOWELL	SERO
SAMPLES COLLECTED BY		**ANALYSIS PERFORMED BY (LAB)**	**DATE**

IRRIGATED STORMWATER | **NO IRRIGATED STORMWATER FOR MONTH:** ☒

DAY	VOLUME IRRIGATED GALLONS DAILY	APPLICATION AREA ACRES DAILY	APPLICATION RATE INCHES/ACRE DAILY	ETHYL-BENZEN mg/L Once/month	OIL & GREASE mg/L Once/month	PETROLEUM HYDRO., TOTAL mg/L Once/month	pH SU Once/month	ETHANOL mg/L Once/month
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Tot of Samp.								
Monthly Avg.								
Daily Max.								

Signature and Title of Individual Preparing Report:	Date:	Phone Number:	Email Address:
Signature of Owner or Designee Approving Report:	Date:	Phone Number:	Email Address:

Return form to: Missouri Department of Natural Resources, Southeast Regional Office, 2155 North Westwood Blvd. Poplar Bluff MO 63901

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER POLLUTION CONTROL PROGRAM

DUE BY: JANUARY 28TH

MONTHLY MONITORING RECORD **FOR THE MONTH OF:** May , 2013

NAME OF FACILITY	PERMIT NUMBER	COUNTY	REGION
COASTAL ENERGY CORP.	MO-0136883	HOWELL	SERO

SAMPLES COLLECTED BY	ANALYSIS PERFORMED BY (LAB)	DATE

IRRIGATED STORMWATER | **NO IRRIGATED STORMWATER FOR MONTH: ☑**

DAY	VOLUME IRRIGATED GALLONS DAILY	APPLICATION AREA ACRES DAILY	APPLICATION RATE INCHES/ACRE DAILY	ETHYL-BENZEN mg/L Once/month	OIL & GREASE mg/L Once/month	PETROLEUM HYDRO., TOTAL mg/L Once/month	pH SU Once/month	ETHANOL mg/L Once/month
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Tot of Samp.								
Monthly Avg.								
Daily Max.								

Signature and Title of Individual Preparing Report:	Date:	Phone Number:	Email Address:
Signature of Owner or Designee Approving Report:	Date:	Phone Number:	Email Address:

Return form to: Missouri Department of Natural Resources, Southeast Regional Office, 2155 North Westwood Blvd. Poplar Bluff MO 63901

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER POLLUTION CONTROL PROGRAM

DUE BY: JANUARY 28TH

MONTHLY MONITORING RECORD **FOR THE MONTH OF:** June , 20 13

NAME OF FACILITY	PERMIT NUMBER	COUNTY	REGION
COASTAL ENERGY CORP.	MO-0136883	HOWELL	SERO

SAMPLES COLLECTED BY	ANALYSIS PERFORMED BY (LAB)	DATE

IRRIGATED STORMWATER | **NO IRRIGATED STORMWATER FOR MONTH: ☒**

DAY	VOLUME IRRIGATED GALLONS DAILY	APPLICATION AREA ACRES DAILY	APPLICATION RATE INCHES/ACRE DAILY	ETHYL-BENZEN mg/L Once/month	OIL & GREASE mg/L Once/month	PETROLEUM HYDRO., TOTAL mg/L Once/month	pH SU Once/month	ETHANOL mg/L Once/month
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Monthly Avg.								
Daily Max.								

Signature and Title of Individual Preparing Report:	Date:	Phone Number:	Email Address:
Signature of Owner or Designee Approving Report:	Date:	Phone Number:	Email Address:

Return form to: Missouri Department of Natural Resources, Southeast Regional Office, 2155 North Westwood Blvd. Poplar Bluff MO 63901

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER POLLUTION CONTROL PROGRAM

DUE BY: JANUARY 28TH

MONTHLY MONITORING RECORD **FOR THE MONTH OF:** July , 2013

NAME OF FACILITY	PERMIT NUMBER	COUNTY	REGION
COASTAL ENERGY CORP.	MO-0136883	HOWELL	SERO

SAMPLES COLLECTED BY	ANALYSIS PERFORMED BY (LAB)	DATE

IRRIGATED STORMWATER | **NO IRRIGATED STORMWATER FOR MONTH: ☒**

DAY	VOLUME IRRIGATED GALLONS DAILY	APPLICATION AREA ACRES DAILY	APPLICATION RATE INCHES/ACRE DAILY	ETHYL-BENZEN mg/L Once/month	OIL & GREASE mg/L Once/month	PETROLEUM HYDRO., TOTAL mg/L Once/month	pH SU Once/month	ETHANOL mg/L Once/month
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No.of Samp.								
Tot. of Samp.								
Monthly Avg.								
Daily Max.								

Signature and Title of Individual Preparing Report:	Date:	Phone Number:	Email Address:
Signature of Owner or Designee Approving Report:	Date:	Phone Number:	Email Address:

Return form to: Missouri Department of Natural Resources, Southeast Regional Office, 2155 North Westwood Blvd. Poplar Bluff MO 63901

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER POLLUTION CONTROL PROGRAM

DUE BY: JANUARY 28TH

MONTHLY MONITORING RECORD **FOR THE MONTH OF:** August , 2013

NAME OF FACILITY	PERMIT NUMBER	COUNTY	REGION
COASTAL ENERGY CORP.	MO-0136883	HOWELL	SERO
SAMPLES COLLECTED BY		**ANALYSIS PERFORMED BY (LAB)**	**DATE**

IRRIGATED STORMWATER				NO IRRIGATED STORMWATER FOR MONTH: ☑				
DAY	VOLUME IRRIGATED GALLONS DAILY	APPLICATION AREA ACRES DAILY	APPLICATION RATE INCHES/ACRE DAILY	ETHYL-BENZEN mg/L Once/month	OIL & GREASE mg/L Once/month	PETROLEUM HYDRO., TOTAL mg/L Once/month	pH SU Once/month	ETHANOL mg/L Once/month
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Tot of Samp.								
Monthly Avg.								
Daily Max.								

Signature and Title of Individual Preparing Report:	Date:	Phone Number:	Email Address:
Signature of Owner or Designee Approving Report:	Date:	Phone Number:	Email Address:

Return form to: Missouri Department of Natural Resources, Southeast Regional Office, 2155 North Westwood Blvd. Poplar Bluff MO 63901

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER POLLUTION CONTROL PROGRAM

DUE BY: JANUARY 28TH

MONTHLY MONITORING RECORD **FOR THE MONTH OF: Sept. , 20 13**

NAME OF FACILITY	PERMIT NUMBER	COUNTY	REGION
COASTAL ENERGY CORP.	MO-0136883	HOWELL	SERO
SAMPLES COLLECTED BY		ANALYSIS PERFORMED BY (LAB)	DATE

IRRIGATED STORMWATER | **NO IRRIGATED STORMWATER FOR MONTH: ☒**

DAY	VOLUME IRRIGATED GALLONS DAILY	APPLICATION AREA ACRES DAILY	APPLICATION RATE INCHES/ACRE DAILY	ETHYL-BENZEN mg/L Once/month	OIL & GREASE mg/L Once/month	PETROLEUM HYDRO., TOTAL mg/L Once/month	pH SU Once/month	ETHANOL mg/L Once/month
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Tot of Samp.								
Monthly Avg.								
Daily Max.								

Signature and Title of Individual Preparing Report:	Date:	Phone Number:	Email Address:
Signature of Owner or Designee Approving Report:	Date:	Phone Number:	Email Address:

Return form to: Missouri Department of Natural Resources, Southeast Regional Office, 2155 North Westwood Blvd. Poplar Bluff MO 63901

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER POLLUTION CONTROL PROGRAM

DUE BY: JANUARY 28TH

MONTHLY MONITORING RECORD **FOR THE MONTH OF:** Oct , 20 13

NAME OF FACILITY	PERMIT NUMBER	COUNTY	REGION
COASTAL ENERGY CORP.	MO-0136883	HOWELL	SERO
SAMPLES COLLECTED BY		**ANALYSIS PERFORMED BY (LAB)**	**DATE**

IRRIGATED STORMWATER | **NO IRRIGATED STORMWATER FOR MONTH:** ☒

DAY	VOLUME IRRIGATED GALLONS DAILY	APPLICATION AREA ACRES DAILY	APPLICATION RATE INCHES/ACRE DAILY	ETHYL-BENZEN mg/L Once/month	OIL & GREASE mg/L Once/month	PETROLEUM HYDRO., TOTAL mg/L Once/month	pH SU Once/month	ETHANOL mg/L Once/month
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Tot of Samp.								
Monthly Avg.								
Daily Max.								

Signature and Title of Individual Preparing Report:	Date:	Phone Number:	Email Address:
Signature of Owner or Designee Approving Report:	Date:	Phone Number:	Email Address:

Return form to: Missouri Department of Natural Resources, Southeast Regional Office, 2155 North Westwood Blvd. Poplar Bluff MO 63901

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER POLLUTION CONTROL PROGRAM

DUE BY: JANUARY 28TH

MONTHLY MONITORING RECORD **FOR THE MONTH OF:** Nov , 20 13

NAME OF FACILITY	PERMIT NUMBER	COUNTY	REGION
COASTAL ENERGY CORP.	MO-0136883	HOWELL	SERO
SAMPLES COLLECTED BY		**ANALYSIS PERFORMED BY (LAB)**	**DATE**

IRRIGATED STORMWATER | **NO IRRIGATED STORMWATER FOR MONTH:** ☒

DAY	VOLUME IRRIGATED GALLONS DAILY	APPLICATION AREA ACRES DAILY	APPLICATION RATE INCHES/ACRE DAILY	ETHYL-BENZEN mg/L Once/month	OIL & GREASE mg/L Once/month	PETROLEUM HYDRO., TOTAL mg/L Once/month	pH SU Once/month	ETHANOL mg/L Once/month
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Signature and Title of Individual Preparing Report:	Date:	Phone Number:	Email Address:
Signature of Owner or Designee Approving Report:	Date:	Phone Number:	Email Address:

Return form to: Missouri Department of Natural Resources, Southeast Regional Office, 2155 North Westwood Blvd. Poplar Bluff MO 63901

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER POLLUTION CONTROL PROGRAM

DUE BY: JANUARY 28TH

MONTHLY MONITORING RECORD **FOR THE MONTH OF:** Dec , 20 13

NAME OF FACILITY	PERMIT NUMBER	COUNTY	REGION
COASTAL ENERGY CORP.	MO-0136883	HOWELL	SERO

SAMPLES COLLECTED BY	ANALYSIS PERFORMED BY (LAB)	DATE

IRRIGATED STORMWATER | **NO IRRIGATED STORMWATER FOR MONTH:** ☒

DAY	VOLUME IRRIGATED GALLONS DAILY	APPLICATION AREA ACRES DAILY	APPLICATION RATE INCHES/ACRE DAILY	ETHYL-BENZEN mg/L Once/month	OIL & GREASE mg/L Once/month	PETROLEUM HYDRO., TOTAL mg/L Once/month	pH SU Once/month	ETHANOL mg/L Once/month
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Signature and Title of Individual Preparing Report:	Date:	Phone Number:	Email Address:
Signature of Owner or Designee Approving Report:	**Date:**	**Phone Number:**	**Email Address:**

Return form to: Missouri Department of Natural Resources, Southeast Regional Office, 2155 North Westwood Blvd. Poplar Bluff MO 63901

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM – WATER POLLUTION BRANCH

ANNUAL OPERATIONS AND MAINTENANCE REPORT

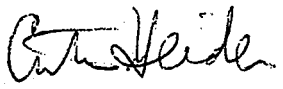
MAIL TO: MISSOURI DEPARTMENT OF NATURAL RESOURCES, SOUTHEAST REGIONAL OFFICE 2155 NORTH WESTWOOD BLVD POPLAR BLUFF, MO 63901		ANNUAL REPORT DUE: JANUARY 28TH
PERMIT NUMBER MO-0136883	COUNTY HOWELL	THIS REPORT COVERS YEAR: JANUARY 1, 2012 through DECEMBER 31, 2012
FACILITY NAME COASTAL ENERGY CORP.	PHONE #: 417-469-2777	FACILITY ADDRESS 1 Coastal Drive, Willow Springs, MO 65793
OWNER NAME Coastal Energy Corporation	PHONE #: 417-469-2777	OWNER ADDRESS P.O. Box 218, Willow Springs, MO 65793

Note 2 – Records shall be maintained and summarized into an annual operating report, which shall be submitted by January 28th of each year for the previous calendar year period. The report shall include the following:

(a) Record of maintenance and repairs performed during the year, average number of times per month the facility is checked to see if it is operating properly, and description of any unusual operating conditions encountered during the year;

(b) The number of days the facility discharged during the year, the discharge flow, the reasons discharge occurred and effluent analysis performed.

There was no discharge during 2012 and thus no irrigation occurred due to rainfall being below normal throughout the year. Rainfall records for 2012 are attached. Since the irrigation system was not used, no maintenance or repairs were needed.

REPORT COMPLETED BY	DATE
Curtis Heider, Consultant 	1/15/2013
SIGNATURE OF OWNER OR DESIGNEE APPROVING REPORT	DATE

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER POLLUTION CONTROL PROGRAM

DUE BY: JANUARY 28TH

MONTHLY MONITORING RECORD **FOR THE MONTH OF:** January , 20 12

NAME OF FACILITY	PERMIT NUMBER	COUNTY	REGION
COASTAL ENERGY CORP.	MO-0136883	HOWELL	SERO

SAMPLES COLLECTED BY	ANALYSIS PERFORMED BY (LAB)	DATE

IRRIGATED STORMWATER

NO IRRIGATED STORMWATER FOR MONTH: ☒

DAY	VOLUME IRRIGATED GALLONS DAILY	APPLICATION AREA ACRES DAILY	APPLICATION RATE INCHES/ACRE DAILY	ETHYL-BENZEN mg/L Once/month	OIL & GREASE mg/L Once/month	PETROLEUM HYDRO., TOTAL mg/L Once/month	pH SU Once/month	ETHANOL mg/L Once/month
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Signature and Title of Individual Preparing Report:	Date:	Phone Number:	Email Address:
Gary Pruett	2/1/12	417-469-3777	gary@coastal-fmc.com
Signature of Owner or Designee Approving Report:	**Date:**	**Phone Number:**	**Email Address:**
Robert Montgomery	1/9/13	Same	david@coastal-fmc.com

Return form to: Missouri Department of Natural Resources, Southeast Regional Office, 2155 North Westwood Blvd. Poplar Bluff MO 63901

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER POLLUTION CONTROL PROGRAM

DUE BY: JANUARY 28TH

MONTHLY MONITORING RECORD **FOR THE MONTH OF:** February , 20 12

NAME OF FACILITY	PERMIT NUMBER	COUNTY	REGION
COASTAL ENERGY CORP.	MO-0136883	HOWELL	SERO

SAMPLES COLLECTED BY	ANALYSIS PERFORMED BY (LAB)	DATE

IRRIGATED STORMWATER | **NO IRRIGATED STORMWATER FOR MONTH:** ☑

DAY	VOLUME IRRIGATED GALLONS DAILY	APPLICATION AREA ACRES DAILY	APPLICATION RATE INCHES/ACRE DAILY	ETHYL-BENZEN mg/L Once/month	OIL & GREASE mg/L Once/month	PETROLEUM HYDRO., TOTAL mg/L Once/month	pH SU Once/month	ETHANOL mg/L Once/month
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Tot of Samp.								
Monthly Avg.								
Daily Max.								

Signature and Title of Individual Preparing Report:	Date:	Phone Number:	Email Address:
Gary Pearce	3/1/12	417-469-2709	gary@coastal-fmc.com
Signature of Owner or Designee Approving Report:	**Date:**	**Phone Number:**	**Email Address:**
David Montgomery	1/9/13	Same	david@coastal-fmc.com

Return form to: Missouri Department of Natural Resources, Southeast Regional Office, 2155 North Westwood Blvd. Poplar Bluff MO 63901

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER POLLUTION CONTROL PROGRAM

DUE BY: JANUARY 28TH

MONTHLY MONITORING RECORD **FOR THE MONTH OF: March , 20 12**

NAME OF FACILITY	PERMIT NUMBER	COUNTY	REGION
COASTAL ENERGY CORP.	MO-0136883	HOWELL	SERO

SAMPLES COLLECTED BY	ANALYSIS PERFORMED BY (LAB)	DATE

IRRIGATED STORMWATER	NO IRRIGATED STORMWATER FOR MONTH: ☑

DAY	VOLUME IRRIGATED GALLONS DAILY	APPLICATION AREA ACRES DAILY	APPLICATION RATE INCHES/ACRE DAILY	ETHYL-BENZEN mg/L Once/month	OIL & GREASE mg/L Once/month	PETROLEUM HYDRO., TOTAL mg/L Once/month	pH SU Once/month	ETHANOL mg/L Once/month
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Tot of Samp.								
Monthly Avg.								
Daily Max.								

Signature and Title of Individual Preparing Report:	Date:	Phone Number:	Email Address:
Gary Pierce	4/2/12	417-469-2777	gary@coastal-fmc.com
Signature of Owner or Designee Approving Report:	**Date:**	**Phone Number:**	**Email Address:**
David Montgomery	1/9/13	same	david@coastal-fmc.com

Return form to: Missouri Department of Natural Resources, Southeast Regional Office, 2155 North Westwood Blvd. Poplar Bluff MO 63901